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INTELLECTUAL PRINCIPLES;

OR,

Elements of Mental Science.

INTUITIONS—THOUGHTS—BELIEFS.

BY

JOHN H. GODWIN,

HON. PROF. NEW COLL. LOND.

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Part I.

INTUITIONS OR PRESENTATIONS.

Part II.

THOUGHTS OR REPRESENTATIONS.

Part III.

BELIEFS OR CONVICTIONS.

"Surely there is a spirit in Man,
And the inspiration of the Almighty gives understanding."
Job xxxii. 8.

"First is wisdom. Get wisdom:
And with all thy getting get understanding."
Prov. iv. 7.

"WISDOM is approved of her children."
Matt. xi. 19.

PREFACE.

THE title prefixed to this volume is intended to show the limits to which it is confined. PSYCHOLOGY has respect to the whole Spiritual nature of Man,—to Knowledge of every kind and degree, and to all the Feelings and Actions it occasions. Mind is often used with the same comprehensive meaning, as when Mind is opposed to Matter, and Man is said to consist of Mind and Body. But more commonly, Mind is used in a limited sense, as Intellect and Understanding. Mental Science is the part of Psychology which respects Intellectual Principles, and every description of Knowledge; while Moral Science includes all Active Principles,—Emotions, Desires, Affections, and Volitions,—as well as the sentiments especially called Moral, which primarily respect human character and conduct. Both these sciences regard the *spiritual* nature, of which everyone is conscious. Another science, Human Physiology, has respect to the *corporeal* nature, of which the *brain* and the *nerves* are important portions. Physiology states what is known of these, not by inward consciousness, but by outward observation. The Nervous system is connected in various ways with the Mental and Moral states of which we are conscious, as well as with all that belongs to living bodies; but it forms another branch of know-

ledge. Many works on Mental Science are too large for general use; some are much occupied with the discussion of opinions ancient and modern, the chief interest of which is literary; and others set forth what is known or supposed of the Body, as though the Soul and the Body were evidently one and the same. But all the qualities of these two objects are entirely different, the one is known by inward inspection and the other by outward, and it is confessedly impossible to state the knowledge of one in terms of the other. Therefore it seems most proper, from the beginning, to consider these objects separately, however closely they are combined. A small work on Mental Science may be more useful, if restricted to the Mind; noticing the Body only so far as it evidently belongs to the elements of Knowledge, and the exercise of Intelligence. The prevalence of materialistic views on all subjects is to be attributed, partly to the disproportionate regard paid by many to Material sciences, and partly to the abstract and difficult character of much that has been written on Mental subjects. It is desirable that more attention should be given to the spiritual nature which all have; and that Mental Science should be brought from the schools of philosophy to the common dwellings of men.

The following work respects only Knowledge, but it includes every kind, from the lowest to the highest, of ourselves and of every other object. Men have not to learn from books, or any testimony, what is to be found in their own minds. This may be best known by observing and considering what each person feels and perceives within. While there is mystery everywhere, within and without, there is much that is clear and sure, interesting

and important, concerning our own minds, which all may know. States of Mind are known before the Faculties, which are inferred from them and are only thus known. Therefore it seems proper to consider, primarily and principally, all the mental conditions of which we are conscious. Other sciences are chiefly for some, but Mental and Moral Science respect all, and they are for all. The writer has made little use of technical terms, employing common language where this would not be misunderstood. The three principal terms, — Intuitions, Thoughts, and Beliefs, — have been variously employed: but they are often used with the senses here given. Intuition is used for all knowledge of that which is really present and directly perceived. Thought is used for every mental representation of absent objects. Belief is used for all knowledge that is not intuitive; both that which is equally certain, and that which is of the same nature, however inferior in degree.

The purpose of the writer is to offer some aid to observation and reflection on objects near to all and open to all, rather than to give information. He thinks it may be shown, that some truths much disputed need no proof, because they are self-evident; that principles of reasoning, denied or disregarded by some, are identical with those universally received; and that we may know sufficiently all that it most concerns us to know. They who would be truly wise look to the *spiritual* facts of which we are conscious, as well as to the *material* facts which the senses show. They regard the manifest *products* which are intelligible to all, more than the secret *processes* which are but partially understood by a few. They consider chiefly, not

the objects which are comparatively little and low, but those which are evidently the highest and best. The old lesson, "Know thyself," is of universal application and importance. It is the beginning of all Knowledge, and is requisite for all right thinking, feeling, and conduct.

J. H. G.

CONTENTS.

PART II.

PART III.

DIVISION III.

DIVISION IV.

DIVISION V.

DIVISION VI.

APPENDIX A.

APPENDIX B.

INTRODUCTION.

BEFORE entering on the study of Mental Science, it is proper briefly to notice its nature as Science, some inducements to its study, the method to be pursued, the source from which all knowledge of Mind must be derived, and the primary divisions which give an outline of the subjects to be considered. The principal terms being ambiguous, the sense in which they are used requires to be stated.

1. MIND, according to a simple and common definition, is that which knows, thinks, and believes. These are *states* of Mind, with which every one is in some measure acquainted from the beginning of life. We are *conscious* of these states, knowing them directly; and at the same time, not before or after, we have some knowledge of a *self*, the single *subject* of these states; and also of something not ourselves, their immediate *object*. There are other states of the same *self* also known directly—emotions, desires, affections, and volitions; and these too are often attributed to the Mind. But generally when Mind is spoken of, some kind and degree of Knowledge is specially referred to; and the Mind is the same as the Intellect or Understanding, these names being given to one portion of our spiritual nature. Knowledge is the occasion of those Feelings which lead to voluntary Action; and mental feelings and

voluntary actions are most conveniently considered after Knowledge, though they cannot be altogether separated. In common usage Mental Science has respect chiefly to what we know and think, Moral Science to what we desire and do.*

Scientific differs from common knowledge in that it is *general*, referring to classes of facts; it is therefore of large extent and wide application, and it is the same for all. It should be accurately ascertained and expressed, and be arranged as a whole according to the way in which the several parts are connected with one another. Mental Science is such a collection of truths respecting Mind.

2. Peculiar interest belongs to Mental Science because it respects ourselves, our own higher nature, and all our knowledge of every other object. The nature of all knowledge depends equally on the nature of that which *knows* and on the nature of that which is *known*, and therefore a just estimate of all other knowledge requires a knowledge of our own minds. This is of special importance when the Mind is to be affected in any way. The mental powers are the *means* which must be used in the attainment and communication of all knowledge, and they are the *subjects* to be influenced thereby. The proper cultivation of the Mind is impossible without some knowledge of what we are and may become, and this culture will be more complete and effective when knowledge is extensive, exact, and orderly. While much may be gained and done through a common knowledge of mental faculties and laws, it is evident that the acquisition and communication of knowledge will be facilitated and promoted by the proper use of Mental Science.

In the study of Material Sciences attention is given to one portion of Nature, and chiefly to one kind of Evidence.

* This agrees with the very old division of Psychology into two parts, the Understanding and the Will.

But the greater portion of human knowledge, that which has the highest interest and importance, respects the thoughts and affections, the conduct and character, of men. Most of the literature of the world respects what is *mental* and *moral*, as distinguished from what is merely *material;* and the welfare of individuals, families, and nations depends more on the former than on the latter. The claims made on behalf of material sciences, as surer and more useful, if not nobler, than others, cannot be rightly appreciated unless other objects and other evidences are duly considered. If it be assumed that Nature is all that can be known by us, and if the lower parts of human nature be taken as the whole, and some physical axioms are employed to the exclusion of all others, and if things really different are regarded as the same, the results must be erroneous and disastrous. But without some knowledge of Mental Science it cannot be seen when and how far these things are done.

All studies are profitable for the exercise of the faculties, which they require; and Mental Science is especially useful, because it requires the exercise of *all* our faculties, and because it is closely connected with *all* the various occupations of life. Illustrations and applications of its truths are to be found everywhere. While other sciences can be studied only occasionally, and need some apparatus and instruments, Mental Science may be studied in all places and at all times, and requires only the exercise of our own powers of observation and reflection.

3. As all our knowledge of Nature comes from Experience, so it is with our knowledge of Mind. Observation and Experiment are the two forms of Experience; by the first men learn that which appears without their interference, and by the second that which appears in consequence. Both are employed in the study of Mind; for while many things come apart from any choice or action, many others

are thus obtained. From the knowledge of a few things we advance to that of more, little being given *in* experience, but much being gained *from* it. Generalization is the extension to many objects of names, ideas, and propositions, which primarily belong to some one. The aim of all Science, as stated by Mr. Mill, is to ascertain and set forth general truths respecting existence, co-existence, sequence, resemblance, causation. Induction is the passing on from what is particular to what is general; and Deduction is the reverse, the passing from what is general to what is particular. The same logical principles and rules apply to all natural sciences, and the nature of Mind is learnt from Experience, as that of any material object is. Some things are directly perceived, and others are inferred from them. Classification is the putting together objects according to their resemblances and differences. Common classifications have respect to the more obvious properties and agreements; Scientific, to those most constant and important. Mental Analysis is the looking separately at all the parts of some whole, and Synthesis is the combining and viewing as a whole that which has been regarded separately. These are processes of Mind requisite to all correct extensive generalization and classification, and are of universal use and importance. The whole cannot be properly known unless the parts are considered separately; nor the parts, unless their relation to one another and the whole be regarded. Many more resemblances and constant connections are seen when the elements of objects are regarded than would otherwise appear. The Experience, which is the foundation of all knowledge, must be complete and not partial, and include all known facts, the Spiritual as well as the Corporeal. Hypotheses are *suppositions* made to guide observation and experiment, or to aid reflection in considering many facts. For these ends they are of great use; but they establish no conclusions, though often advanced as arguments. Experi-

ence shows that plausible *suppositions* are often false, and therefore they can have no evidence, but as similar hypotheses have been found to be *anticipations* of facts.

4. Of the Mind itself, with all its states and capacities, its changes and laws, we learn nothing by outward observation; all our knowledge is from within. The knowledge of other objects may be traced back to some knowledge of ourselves; that of other bodies to a primary knowledge of our own bodies, and that of other minds to a primary knowledge of our own minds. Much of our knowledge of both is *inferential;* but this must come from what is *intuitional*, and all that is intuitional is given in Consciousness. This knowledge is fundamental. No inspection of the nervous system and the brain can show anything of the nature of a sensation, a thought, a belief, an emotion, an affection, a purpose. Outward observations show what is connected in various ways with states of Mind, but of the mental states they show nothing. As we can learn nothing of what is *without* by looking to what is *within*, so we can learn nothing of what is *within* by looking to what is *without.* Some state of the Brain is requisite to the study of any science, but no examination of the Brain will give any knowledge of Botany, Chemistry, Geometry; and so no study of the Brain can show the nature of the Mind. The Brain is always found in connection with Mind, and many correspondences have been observed; but these only show some general connection between the two, nothing more. Persons need clothes as well as bodies, and in most cases are not seen without both. The latter are changed as completely as the former, only not so quickly and obviously. The clothes correspond to the body in shape, size, and motion, and are almost indispensable. The body acts on the clothes in various ways, and the clothes act on the body. But the clothes are not the body, nor have they the

same qualities, nor can anything of the special nature of the body be learnt by examining the clothes. It is just the same with the Nervous System and the Mind.*

5. Consciousness is the knowledge which the Mind has directly of itself and its present states—sensations, thoughts, beliefs, desires, affections—with whatever is directly and necessarily perceived at the same time. The name is also given to the power or capacity of the mind, through which it has this knowledge. It is not like the special faculties, one of which may be exercised without the other; but it belongs inseparably to all. Sensation would not be sensation if we were unconscious of it, nor would thought be thought; nor could there be any perception or feeling without consciousness. There are many states of body and mind of which we are never conscious; but there can be no sensations, or thoughts, or beliefs; no emotions, or affections, or purposes; without a present or former consciousness. As there cannot be these states of mind without consciousness, so there cannot be consciousness without some particular state of mind. We are never conscious of simple existence, but only of ourselves, as seeing or hearing, remembering or reasoning, regretting or rejoicing. The nature of these states of mind is shown in consciousness; and in unconsciousness they entirely cease to be what they were seen to be in consciousness, whatever may remain. Comparatively little is seen in consciousness; but this being fundamental is of the highest importance, and nothing can

* The nose and the ear, the hands and feet, have some mental correspondences; yet no one thinks that these organs are used by the Mind except for bodily functions—smelling, hearing, handling, walking. Shame causes a blush on the countenance, and fear produces paleness; but no one supposes that the emotions of the Mind belong to the face of the body. The identity which is not shown by a few correspondences cannot be proved by any number.

be more certain. Many things may seem to be given in consciousness which are not really there, being the result of association and inference, and these may be disproved. But nothing can be more sure than that of which we are really conscious, and the evidence of consciousness never has been disproved, and never can be; for nothing is more certain. All that is shown in consciousness requires no proof, for it is self-evident; and we can only refer to the occasions when we are thus conscious, and to other facts which are known in the same way. The rules stated by Sir W. Hamilton in vindication of common-sense need no argument. Nothing is to be referred to consciousness that is not really there; but everything there given is to be received, as known with the same immediacy and certainty.

Consciousness does not require for its existence any effort or choice, but it is in some degree subject to our control. The knowledge that is given in *consciousness*, without any special *attention*, is increased by the exercise of *attention*, whether voluntary or involuntary; and as that to which *attention* is drawn or directed is perceived more clearly and completely, so all besides becomes faint and obscure. If we look at a prospect without attending to any particular object, we have a partial and indistinct view of many things; but if our regard is fixed on some one, it is seen more fully and distinctly, while the view of other objects lessens, and may be lost entirely. It is the same with our minds; but as seeing and hearing are the same in nature, whether with or without attention, so is consciousness. The term is sometimes used for consciousness *with attention*, and this is described as a fault when the *attention* should not be given to *self*, but to another *object*. One of the difficulties belonging to Mental Science arises from the double exercise of attention which is often required. Certain states of mind require for their completeness that

attention should be given to some object; but these states of mind to be fully known must be themselves the object of attention. The more attention is given to one, the less is given to the other; and so states of mind change under examination, and may disappear because too much regarded. In all states of consciousness there are some apprehensions of both *subject* and *object*, and they vary inversely. The more we see of the one, the less we see of the other. The knowledge given by consciousness is increased by attention and repetition, while it is aided and enlarged by the exercise of Memory, and by the consideration of all the productions of Mind, especially those shown in Language. There are states of consciousness so slight as to be immediately forgotten; and parts of a series at first given in consciousness may cease to exist there, the continued knowledge being useless. It is so with all habitual actions. In various ways the interpretation of Consciousness may be erroneous; but this does not affect its authority. There is no higher authority to which we can appeal.*

6. All knowledge is Presentative or Representative. There could not be the latter unless there had been the former.

* When mention is made of Consciousness, there is often only an emphatic expression of what is briefly stated in simple language. Thus, *I see something red* = I am conscious that I see something red. *I admire* = I am conscious that I feel admiration. *I feel the heat of the fire*, states both intuition and inference. There is the consciousness of the *sensation*, and of the *belief* respecting its cause. Sometimes the term is used to remove ambiguity. We do not say that we see or hear, think or feel, except when *conscious* of these states. Yet we commonly say that we know and believe, admire and love, when we have not the *conscious* states which are *transient*, but the corresponding *unconscious* states which are *permanent*. We mean that we *have been* conscious of knowing and believing, admiring and loving, and that we *shall have* these conscious states again and again, whenever there is occasion for their reproduction.

If something was not first *presented* to the Mind, nothing could be *represented.* In Presentative knowledge, the object is *present* to the Mind, and is known directly, while in Representative knowledge it is not so; this being of the *past*, or of the *future*, or of the *distant.* The present sensations and perceptions of the body, the present feelings and actions of the mind, are of the one class, which is limited to that of which we are conscious at any moment; and all other knowledge is of the second class. Representative knowledge is of two kinds — being either of what is *remembered* or of what is *inferred.* Inferences also are of two kinds—being from a simple *natural* connection, or from what appears to be *necessary.* When any object is present to the Mind it is known by looking at it, and is called an Intuition or Presentation. When the object is not present something else is; it is thought of; and that in the mind, which represents the absent object, is called a Thought, Conception, or Representation. Thoughts are generally, but not always, accompanied by other mental states called Beliefs or Convictions. When we *think* of the distant, of the past, or the future, we often *believe* that our present thought agrees with some reality which is not present, *believing* this because it is remembered or inferred. The common lessons of Experience and the belief of Testimony are inferences of Reason, as well as all beliefs respecting the conclusions of Science. All persons are conscious of these three states of Mind — Intuitions, Thoughts, and Beliefs. They are evidently different in their nature, though often combined, and all knowledge consists of these three elements.

In scientific studies it is usual to begin with what is *simple*, and with what is most easily and *directly* known; and then to proceed to what is *complex*, and to what is known *indirectly*, and by inference. In Mental Science the

same course should be taken. There could be no Beliefs if there were not Thoughts; for unless an object be thought of—in some way represented to the Mind—nothing can be *believed* respecting it. There could be no Thoughts if there had not been some previous Intuitions; for we could not *think* of colour if it were never *seen*, nor of joy and grief if they were never felt; and so universally. There might be Intuitions and no Thoughts, and Thoughts with no Beliefs. Intuitions cannot extend beyond present Consciousness. Thoughts are formed from the few elements thus gained; but their combinations are endless in number, variety, and extent. Beliefs have respect to whatever is represented or thought of. They are various in origin and degree, rising from the faintest doubt to the firmest certainty. These three forms of Intelligence are possessed by all, and partially known by all; but they require separate examination and consideration. We begin with Intuitions.

PART I.

INTUITIONS OR PRESENTATIONS.

Division I.

CORPOREAL INTUITIONS.

SENSATIONS AND PERCEPTIONS.

Division II.

SPIRITUAL INTUITIONS.

Division III.

METAPHYSICAL INTUITIONS.

Division IV.

INTUITIONS OF COMPARISON.

Part I.

INTUITIONS OR PRESENTATIONS.

THAT some objects are directly perceived is evident to all. There are different opinions respecting what objects are thus known, but that some are is admitted by all. Some things must be known directly and immediately, or nothing could be known indirectly and mediately. There must be some knowledge that does not come from *association*, to account for that which does; some that is *intuitive*, or nothing could be either *remembered* or *inferred*. Consciousness shows us with perfect clearness and certainty that we have Intuitions, and that they are of various kinds. There are those which respect our own bodies—Corporeal Intuitions; and those which respect our inner and higher nature—Spiritual Intuitions. There are also those which respect what is not a part of Nature, but is perceived with it—Space and Duration; and there are those which result from Comparison, as Number and Relation. In all these something present to the mind is directly perceived, and as the objects are of various kinds, so are the *Intuitions*, though the Faculty of Intuition is the same.

The Faculty is known, as all other mental *capacities* are, by inference from the *states* of mind of which we are conscious. The *states* of intuition are many and different; but in all some object is present, and directly known. The *states* are not only *similar*, but they are so connected as to

be in fact *inseparable*, and therefore all are referred to one Faculty. There cannot be the *intuition* of body without that of mind; nor that of mind without that of body. There cannot be the physical *intuitions* of body and mind without the metaphysical of space and duration, nor the latter without the former. The intuitions of Comparison require only the exercise of Attention.

It seems therefore quite proper to refer all intuitions to one Faculty, though the objects thus known are different. Intuitional knowledge increases as experience is enlarged, and new objects are presented to the mind; and the exercise of the faculty is improved by attention and practice. But no effort will give the power of directly perceiving objects beyond the range of human intuition, according to our natural constitution and our acquired experience.

DIVISION I.

CORPOREAL INTUITIONS.

Sensations and Perceptions.

THE earliest state of which we are conscious is that of feeling some Sensation; and with the first exercise of human intelligence there is some knowledge both of Mind and Body. We cannot have a sensation without *knowing* it, and knowing that it is *ours*. The *self*, the *feeling*, and its *object* are equally present in consciousness, and neither is merely thought of and inferred from the other. We have other feelings, as joy and grief, which are not sensations; but in *sensations* there is always some *perception* of the body, and without this the *feeling* would not be a *sensation;* for there is nothing to distinguish it from feelings that are not sensations. All sensations depend on the *nervous system*, which is extended throughout the body; and some change in the nerves appears to give the *cause* of the sensation, and the *place* where it is experienced. Sensations and Perceptions are always combined, but sometimes what is *felt* predominates, and sometimes what is *perceived.** A bitter taste is spoken of as a *sensation*, a blue colour as a *perception;* but in both there is some *feeling* and some *perceiving*. In most

* Perception is a general term applied to all Intuitions, and to all Inferences which are equally sure, especially to those in which the *intuitive* and *inferential* are so combined as to appear to be one. The Mind alone perceives, and its perceptions are *material* or *immaterial*, as the objects perceived are.

sensations there is an apprehension of some *extension* in the object felt; and in all a similar nature is perceived in the object, and some *locality*—the relation of one sensation to another in a different part of the body. Sensations are not simply states of Mind from which Body is *inferred*, but they are states of Mind in which Body is *perceived*, some knowledge of the latter being given directly. The Body, as a whole, is not known till there have been many sensations, perceptions, and inferences; but something of it is known directly in every sensation, or it would not be a *sensation*; nor could the body be known through any multiplication of sensations, if not in some measure known in every one. A sensation may be felt and forgotten, but at one time it was felt and known, or there was no *sensation*, whatever may have been the condition of the nerves. A certain state of the *nerves* is requisite for sensation, but a certain state of the Mind is also requisite. There may be the same state of the nerves when we are awake and asleep, when attentive or inattentive; but there is not the same experience of *sensation*. If we *attend* to any one sensation it is more completely felt and perceived than when there is no exercise of attention, or this is given to another object. In such cases we know that the state of the Mind is different, and have no reason to suppose that the state of the nerves is different. Therefore while the state of the nerves is one requisite to the experience of sensations, the state of the Mind is another. Sensations may be defined as states of Mind in which there is some direct knowledge of Body. In all we are conscious of *feeling* and *perceiving*, and these are states of Mind; and we are also conscious of some locality, often of some extension, solidity, colour, and these are states of Body. The *feeling* and *perceiving* belong to the Mind, and not to the Body; while the *extension* and *colour* belong to the Body, and not to the Mind. We know nothing of any *thought* or *idea* between the Mind and the object of

intuition. What is not present must be *represented*, but not that which is itself *present*. All sensations are transient, and belong only to the one mind and body in which they are seen and felt. Others may have *similar* sensations, but not the *same*. They know the *same* outward objects, but through the *sensations* which are peculiar to each individual.

Sensations are the natural source of all our knowledge of the Material world, the means of social intercourse, and the earliest occasions of enjoyment and action. They properly come first in the study of states of Mind, though those which follow are very different, and in every respect superior; the objects being immeasurably greater in number and extent, in duration and influence.

Some Sensations are *general*, belonging to the whole body, while others are *special*, being restricted to small parts. The General are the sensations of (1) pressure, (2) temperature, (3) motion, (4) resistance, (5) pleasure, and (6) pain. The Special are the sensations of (1) tasting, (2) smelling, (3) hearing, (4) seeing. These sensations may be felt separately, though they are often combined. They are known more distinctly and completely as experience is repeated and enlarged; but from the first something is *felt* and *perceived*. Where more is felt, less is perceived; and where more is perceived, less is felt. The feeling is for Action, the perceiving is for Knowledge. Perceptions of every kind are therefore more easily thought of and remembered than Feelings.

CHAPTER I.

GENERAL SENSATIONS AND PERCEPTIONS.

1. Pressure.

THE first and most common of our sensations is felt when there is a slight pressure on any part of the surface of the body, the nerves affected being under the outer skin. If at any time we feel that some one has touched us, it is through this sensation. When we rub the hands together, or move the fingers on the face and arms, there is the same sensation; and so when we feel that any clothes press upon us. If a blunt *point* be pressed on the skin no *extent* is perceived, the object being indivisible; but if a *line* is pressed, *linear* extent is perceived; and if a *surface*, then *superficial* extent. If distant parts are touched the sensations are felt to be in different places; and if many parts in *different* places are touched, then something is perceived of *length* and *breadth* and *depth*. A great number of these sensations must be experienced in different parts of the surface, before they can be connected together and give a knowledge of the whole body; but this knowledge comes with a multiplied and varied experience. If *extension* were never *perceived*, it could never be *thought of*. If not shown with this sensation, there is no other by which it could be known. It is now perceived, and for its intuition nothing more is needed than the enlarged experience of this sensation. Thus we gain some knowledge of our own bodies, as having length, breadth, and depth; and of the space in

which they are. When a surface is perceived, another smaller sensation may be felt passing from one part to another; and with this there is some perception of Motion, as when a dark spot is seen to pass from one side of a visible figure to the other.

The body is at first known merely as a present sensible object, existing in space, and sharing some of its properties; but not as a *persistent* substance, and the space is known merely as *present.* Further experience of many sensations, with the exercise of other mental faculties, is necessary for the further knowledge of body and space.

Sensations of pressure differ in various ways, while all are seen to be similar. They are stronger as the pressure is greater, larger as it is more extended, continued or not, as the pressure remains or ceases, and they are regular and irregular in time and degree, as their causes are. But the knowledge of these varieties requires more than the faculty of sensation. The single sensations of pressure are little more than momentary; for what is felt at first soon ceases. The beginning of a slight pressure is felt when its continuance is not. All sensation depends much on the *difference* between the present and the preceding state of the nerves. The sensibility of all nerves appears to be increased by moderate exercise, but diminished and destroyed by excess. That which is felt when attention is given to the part affected may not be felt when attention is given to something else. With the same pressure on the nerves there will not be the same sensation. The sensibility of some parts of the body to slight pressure is much greater than that of others, the nerves being more abundant. It is lessened by the thickening of the outer skin, and by whatever lowers the nervous vitality.

The clear knowledge of *solid* form comes from the sensations of motion and resistance, and that of *superficial* form is best given by the sense of sight; but for some apprehen-

sion of both the sense of pressure, with repetition and attention, seems quite sufficient. There is something intermediate between the mind and any distant object that is known; but there is nothing intermediate between the mind and the states of our own bodies which are felt and perceived. The outward objects which press on them are known only through the intermediate sensations and perceptions which they produce; but there is nothing intermediate between the Mind that feels and perceives, and the states of the Body which are felt and perceived. The difference between the *subject* which knows, and the *object* which is known, becomes more clear and complete as, with increasing experience, we learn the sameness of the former and the variety of the latter.

2. Temperature: Heat and Cold.

The next sensation to *pressure* is equally general, being felt in every part of the body with a change of *temperature*. When the hands are brought near the fire, or placed in hot water, or anything is touched that is warmer, a sensation is felt quite different from that of *pressure*, though it is not known that other nerves are affected. There may be the one sensation and not the other, or both may be experienced together and distinguished. If some extent of surface is warmed, this extent is perceived, though its boundary is not so discernible as in pressure, the heat lessening by imperceptible degrees. When the whole body is in warm water, we feel warm all over. The sensation is not limited to a point, or a line, or a single surface. The warmth is felt from end to end, on one side and the other, above and below.

As Heat is felt when there is a temperature higher than that of the body, so Cold is felt when the temperature is lower. We have this sensation when a fresh wind blows on the face, or the hands are dipped into cold water, or we touch any thing of a lower temperature than the body. A

simple experiment shows the connection of the sensations of *heat* and of *cold*, and their causes. If one hand be placed for a time in warm water, and the other in cold, when both are dipped into water of a mean temperature, the same water will be felt to be both warm and cold. It will be warm to the hand that has been cooled, and cold to the hand that has been warmed. Heat is received by the one and given out by the other.

These sensations vary as those of pressure, being strong or weak, large or small, continuing or ceasing, regular or irregular.

From Pressure and Temperature alone we could know only our own bodies, and these could be known only as existing *forms* with three dimensions, and with the *sensible* qualities which are perceived when pressure and temperature are felt.*

3. Motion.

Besides the sensations which belong to the surface of the body, there are other sensations below the surface, which result from the contraction of the muscles, rendered sensitive by the nerves in them. When we move our limbs we are conscious of *internal* sensations, which may be distinguished from one another as well as from those already noticed. There is some apprehension of their *locality*; for we feel them in the hands or in the feet, on one side or on the other, in the eye and in the tongue. The internal nerves

* The same names are often given to the *sensations* of which we are conscious, and to the outward *objects* afterwards known, which produce the sensations. Thus *heat* denotes the *quality* of objects as well as the *feeling* caused thereby. In like manner *scent*, *sound*, *vision* are ambiguous, meaning either the *sensations* or their outward *causes*. There is no similarity between the *heat* we feel and the *heat* of the fire, between the *scent*, the *sound*, the *colour*, which are felt, and the emitted fragrance of a flower, the vibrations of a bell, the constitution of bodies which makes them red or blue.

being separate from those on the surface, their mutual relations are not discerned, and so by *association* the sensations in the upper part of a limb may be transferred to the extremity; but this is all that can be attributed to association. The *duration* of these sensations is known chiefly by *memory*, and their succession as regular or irregular; but their nature as internal sensations in different parts of the body is shown in consciousness. They are known to be internal, to belong to different parts of the body, to be peculiar; but there is no consciousness of their *direction*, nor of their *extent* in space. They are felt to be more or less agreeable, and give the pleasure which often belongs to *movement*, and is very manifest in children and animals. It is by the combination of the sensations of Motion with the sensations of Pressure that we have with the former a perception of Motion in space, and know it to be long or short, slow or rapid, in this direction or in that.

When our limbs are moved by another, there are only the sensations of *pressure* on the surface of that part of the body which is moved; but when we move our own limbs, there is a sensation in that part which moves. Extension is at first perceived only on the surface when pressed, and *motion* is perceived there, as pressure passes from one place to another. But the perceptions of *extent* and *motion*, given with the external sensation, become connected with the internal sensation, and seem to belong to it, as the perception of distance is transferred to the objects of vision. Thus the muscular sensations, in which no extent or direction is perceived, appear now to give both, and to show that they are long or short in *space*, as well as in *duration*, in this way or in that. By the *pressure* of the hands on every part of the body some knowledge is gained of its surface and form, and of the hands as exterior to that on which they move. The *movement* of the hands gives some knowledge of the space around the body through which they

move ; and by stretching out the arms and feet in various directions—up and down, on this side and that, forward and backward—the knowledge of surrounding space is easily increased. We know by intuition that there is space in which the body is, and space into which it goes. This small knowledge of Space, gained, as that of Body, by a little experience, prepares for the further knowledge in which, by reflection, *beliefs* are added to *intuitions*.

Motion is the existence of a sensible object in adjacent portions of space in successive moments of time. It is perceived in the passing of any such object from one space to another. Motions differ in duration, extent, direction, and regularity. The *rate* of motion is known by comparing the duration and extent of one movement with another. In the choice of some movement of the body, and the consequent change, we have the first consciousness of Will and Power. Some motions are without choice, some may be partially controlled, others begin and end with choice. Some, at first involuntary, become voluntary; while others, at first voluntary, become involuntary.

4. Resistance.

The slight consciousness of exertion, which attends every voluntary movement, becomes more clear when any resistance is overcome. Something is felt when our own movement agrees with an external force, but more when they are in opposition. While in some directions movement is unchecked, in others it is stopped entirely, or can be continued only with an increased effort. That which is required to produce motion is also required to prevent it, and in both cases we have an increased consciousness of effort. There is the same sensation of muscular effort in sustaining a heavy weight, and in moving it. By the same exertion we produce or prevent motion in our own bodies, and in those which we touch. The sensation which belongs to the effort

is pleasant if it be easy and brief, but it becomes painful if excessive in degree or duration. We are conscious of *motion* in our own bodies, and their *solidity* or impenetrability is known by their *resistance* to the effort we make to change their form or place. The similar *mobility* and *solidity* of other bodies are inferred from what we are conscious of in our own. Things are *hard* or *soft*, as they require much or little effort to change their *form;* and they are *heavy* or *light*, as much or little effort is required to produce or prevent a change of *place.* We find that no two portions of the body can be put into the same space, but one must be removed before the other can enter. By pressure most bodies may be reduced in size, the particles being brought nearer; but no effort can make any two parts occupy the same space. Thus our bodies are known, not only as *being* in space, but *filling* it; that is, excluding other similar bodies.

Without a prior knowledge of our own bodies, no other bodies could be known; but from the former, though very small, we easily advance to the latter, however great. When, after repeated experiences, our own bodies are known, not only as existing forms, but as *persistent substances*, we soon obtain a similar knowledge of other bodies. As consciousness includes only the present, we cannot have this direct knowledge of the persistence of any objects. But we have inevitable *convictions* respecting them, the nature and reason of which will be subsequently considered. We are quite sure that the hands moved and the body pressed in one minute, are the *same* with those moved and pressed the next minute. No one has ever doubted this. So we are equally sure when some voluntary movement, not against our own bodies, is stopped in the same place again and again, that there is a substance there like our own body, in remaining and resisting motion. We easily move hands and arms in some directions, but not in others. With

increased effort the resisting objects yield in part or wholly, as our own bodies do. Some objects we can touch all over, as we do our own limbs, and by pressure we change their form and position. Thus other bodies are known to be also extended and solid, movable and divisible, hard and soft, heavy and light. By what we know directly of our own bodies, we first learn something of those which are near, and then by means of these we know those which are far off. Without the sensations of Resistance we might know something of our own bodies, but we could know nothing of others.

These sensations are more or less strong, more or less extended in time and place, more or less regular. From the sensations of Motion and Resistance we have our first knowledge of Force or Power, the latter term including the former. Power is that which produces or prevents motion, or any other change; and it is a natural *cause* inferred from experience. Power not only *precedes* the change; it *accounts* for it, wholly or partially. Muscular effort is one kind of Power, there being many of various kinds—mechanical, chemical, vegetable, animal, mental, and moral. The sensations of pressure and temperature, of motion and resistance, are commonly comprehended in one, and said to be sensations of Touch.

5. Pleasure.

This sensation is sometimes diffused over the whole nervous system, being felt with moderate exercise, rest after exertion, and the proper satisfaction of the wants of the body. When there is the possession of perfect health, there is a pleasure in every act and condition, which belongs to all animals, and is the beginning of the happiness of childhood. A slight pleasure is produced by gentle and varied pressure on the more sensitive parts of the body, as by the movement of a feather on the face and hands. So a mode-

rate degree of warmth or coolness is often found to be pleasant. Sometimes a hot bath is agreeable, and sometimes a cold; sometimes the warmth of sunshine, and sometimes the freshness of mountain air. Much greater are the pleasures of exercise. An agreeable sensation often attends muscular contraction. Very much of the happiness of children, and of all animals, is found in bodily exercise; and the pleasures of movement and exertion are increased by the quicker circulation of the blood, and the better condition of the whole body. The healthy and strong find enjoyment in labour of every kind, as well as in the sports which require as much bodily exertion as any work. Besides the *general* sensations of pleasure, there are the *special*, which belong to particular organs—the pleasures of tasting, smelling, hearing, seeing, eating, drinking.

The pleasures of the senses are low, limited, and transient; but they are innumerable, being repeated daily, and diffused throughout the whole animal creation. Men have their share in these, but no superiority over the brutes. The vast amount of varied animal enjoyment to be found everywhere, in earth and air and sea, surpasses all calculation; and certainly is more than could be expected, if this end were not purposed and provided for. Bodily *enjoyment* is the result of natural conditions and actions, in some respects right, and it serves to promote these; but it gives no rule for bodily safety or health, still less for moral conduct. Many things at first pleasant become painful, injurious, and destructive. The limitation of the pleasures of the senses in human beings is conducive to the pursuit and possession of the mental pleasures, which are higher, and greater, and more enduring; and the control of sensual desires is the first step in that moral discipline which is requisite for the welfare of men. We may be thankful for these pleasures, and also that they are not more and greater.

6. Pain.

As bodily pleasure belongs to all living animals, so does some bodily suffering. The latter may be for a short time greater than the former, but in extent and duration pains are immeasurably less than pleasures. They result from various causes, and secure many beneficial ends. In every part of the nervous system we are susceptible of pain, which is experienced whenever there is any injury. Pressure, heat, cold, and muscular effort, if beyond a certain degree, will occasion pain, as laceration and disease generally do. No one regards *sensations* of pain as simply conditions of Mind, like the pain caused by disappointment and unkindness; for states of body are also felt, without which they would not be sensations. Some *locality* is discerned with all, and often some *extent.* We know directly that a headache is in the head, and not in the feet; a toothache in the mouth, and not in the fingers. Some pains are so small that they have no appreciable magnitude, while that of others is evident. Some through association are referred to impossible places; but this is not inconsistent with their bodily nature, and some primary direct perception of their place. Pains are perceived to differ in locality, in extent, in character, in degree, in duration, and regularity.*

Pain is generally a warning that there is some wrong to be corrected. It serves as a check to prevent what would be injurious and destructive, and as a stimulus to what is beneficial and profitable; while it generally ceases ere long when it can be of no use. The bodily pains of human beings would be much lessened if the laws of health were learnt and observed, and men would help and not hurt

* Animals, who are incapable of receiving the moral benefits of bodily suffering, are much less subject to it than human beings; and they have an abundant compensation for brief and occasional suffering in the pleasure of *activity*, promoted by pain and fear, and in the large amount of bodily enjoyment allotted to them in various ways.

one another. Most accidents result from imprudence. Hereditary diseases, and injuries from the wrong conduct of others, are parts of the system of mutual dependence to which we owe all the benefits of society. Its advantages far exceed its disadvantages, and there is no ill that may not be made conducive to a greater good in the sufferer and in society. With temperance, industry, and prudence, the greater portion of bodily suffering would be soon removed, and these virtues are worth the pains that lead to their possession. When pain cannot be removed, and ought not to be avoided, it gives occasion for fortitude and courage. Suffering results from general laws, of which the consequences are evidently and extensively beneficial; and men are thus led to think of other times and persons, to sympathize with the pains and pleasures of others. Privation and pain have some compensation in the great enjoyment which attends relief, in the compassion and kindness awakened in others, in the pursuit of a higher good to which they prompt, and in the patience and trust which they may produce and confirm. When we think of the vast amount of bodily suffering, we should think also of the much greater amount of enjoyment. We should remember that the causes of bodily pain may be indefinitely diminished, and have no permanent nature; and that those which cannot be removed may all in various ways contribute to the welfare of the individual, and to the general progress of mankind. Often a brief pain is the small price paid for a permanent possession, which is the more precious because it is thus gained. It may be so always. Pain is not an *end* in which any mind can rest with satisfaction, and therefore it should always be regarded as a *means* for preventing some greater ill or producing some greater good.*

* Appetites are not simple *sensations* of pleasure and pain, but *desires* for objects which have been found to give pleasure or remove

pain. Hunger and thirst come from painful sensations in the stomach, throat, and mouth; but when objects have given relief from these and some gratification, the desires, which primarily refer to pain and pleasure, are transferred to these objects. Natural appetites are for the preservation of life, and their laws are conducive to animal welfare. They return as food is needed, and increase in urgency as the need is greater. They do not, however, increase constantly, which would be useless, but at intervals, and they cease when satisfied, or when they would fail to preserve life. In all *natural* appetites there is the same combination of uneasiness and desire, and the desire may be entirely removed from sensual gratification, and be directed to the object which in other and higher ways affords delight.

Acquired appetites arise chiefly from the use of stimulants, and the agreeable condition of the nerve-system which immediately follows. When there is any excess in the use of these, an uncomfortable and painful condition of the nervous system soon succeeds. This is for a time removed by a renewal of the stimulant, but it returns with increased force. The craving for stimulants is strengthened by indulgence; but while they give less and less enjoyment they become more and more injurious. If the craving is resisted it will gradually and beneficially cease, and thus acquired appetites differ from the natural. Stimulants affect the brain as well as subordinate nerves, and so the temporary excitement reaches to the mind, and the consequent weakness and wretchedness.

The uneasiness felt when there is a need of exercise, fresh air, sleep, or any habitual action, has something of the nature of the appetites; but there is not the same definite apprehension of that which affords relief, nor the same transfer of desire. To *govern* the appetites is *human*, to be *governed* by them is *brutish*.

CHAPTER II.

SPECIAL SENSATIONS AND PERCEPTIONS.

1. Taste.

FROM the *general* sensations belonging to the whole body we proceed to the *special*, which are confined to certain parts, and begin with the more simple. All know the sensations of Taste, and that they are in the mouth, which owes its peculiar sensibility to ramifications of the lingual nerve. The locality of no other sensation is perceived more clearly. Liquids and solids when applied to the mouth produce, besides the sensation of pressure, other sensations felt only there. These are of various kinds, as sweet, bitter, sour; but most tastes are named from their objects—the various kinds of bread, meat, fruit, salt, wine, beer, &c. &c. These sensations, as all others, are known only by experience, and this is produced by the contact of sapid substances with the papillæ of the tongue, the saliva dissolving solids. If the taste is strong, the sensibility of the nerves is soon lessened for a while; and if the excitement is often repeated, the sensibility becomes permanently less. It is also diminished by cold and by disease. Some tastes will increase or decrease sensibility to other tastes. Some are pleasant and others unpleasant, and through a lessened sensibility objects pleasant and unpleasant become indifferent; and those which were pleasant in nature, but unpleasant from their strength, become pleasant when weaker. Stimulants are agreeable chiefly from the nervous excitement

they produce, and if often used there must be an increase of strength and quantity to produce the same effect. The pleasant excitement is soon followed by a painful depression, and stimulants continue to be taken chiefly for the transient relief they afford from the consequences of a wrong self-indulgence. Moderate eating and drinking give a large amount of animal enjoyment; but all excess is injurious, and sooner or later is found to be enfeebling, painful, and destructive.

Some tastes are produced by galvanism, and some are changed by association, things once agreeable becoming thus disagreeable. Where there is morbid sensibility, the sensations first produced by sapid substances may be reproduced by thinking of the past. Nauseous tastes are sometimes brought back by seeing the objects or places with which they were before experienced. This reproduction of sensations by thought, without the usual outward cause, is more often recognised in hearing and seeing.* By practice differences of *taste* are more readily discerned, partly from the increase of sensibility which comes with proper exercise, but principally from the improved power of observation.

Pleasant tastes add to the enjoyment of animal existence, and promote the proper use of food. Unpleasant tastes help to the discrimination of what is unwholesome. Both contribute to the increase of knowledge, and give occasion for the exercise of self-control.

2. Smell.

This sensation is felt in the nostrils, being produced on the olfactory nerve spread there in the pituitary membrane; and it is apparently caused by solids, fluids, and gases.

* Thoughts generally produce only *mental* feelings and *voluntary* movements, but sometimes they also occasion various *sensations* and *involuntary* motions.

The nerves of *taste* and *smell* are distinct, but so connected that there is some sympathy. There are a few general classes, as fresh, fragrant, stale, stinking; but most scents are distinguished by the names of their objects—the smell of a rose, a violet, lavender, lilac, &c. &c. Pleasant scents add something to animal enjoyment, and to some animals they are of great use in the pursuit of food. Unpleasant scents are also useful as signs of something to be avoided or removed. Offensive odours are always hurtful, and are nature's warnings to secure cleanliness, to support sanitary regulations, and to deter from regions unfit for human habitation. The sensibility of the nerves for *smelling* changes as those of tasting, and in the same way the unpleasant may become indifferent or even pleasant, as with snuff. When a scent is received from distant objects, it is probably through the emission of particles, though their minuteness and number baffle all calculation. A grain of musk will scent a room for a considerable time, though the atmosphere is ever changing. The fragrance of the Spice Islands is perceived far out at sea. Scents as well as tastes may be reproduced by association. That an odorous substance is at a distance is learnt from another experience. They are strong when near, and faint when far off. When the outward cause of scents is learnt by other sensations, we *perceive* the rose and the lilac by their scents when they are unseen.

3. Hearing.

The place of this sensation is known to be on the two sides of the head, where organs are formed to receive the vibrations or undulations which come from without. These enter by the outer ear, and strike on a membrane, which separates it from the middle ear—*the drum*—and this has an opening—*the eustachian tube*—at the back of the mouth. By a series of small bones these movements are transmitted to another membrane, which covers a fluid in the inner ear

—*the labyrinth*—where there is an expansion of the auditory nerve. Here the sensation of hearing is felt. The number and variety of sounds is very great, and all are produced by impulses transmitted through the atmosphere, or through solid and liquid substances.* In *musical* sounds the vibrations are regular, *high* notes being caused by many vibrations, and *low* notes by few. In other sounds the vibrations are irregular, and vary as musical sounds, being *high* or *low*, as the impulses are many or few; *loud* or *faint*, as the impulses are strong or feeble. Some sounds are pleasant, and others unpleasant; but most, as sensations, are indifferent, and gain their influence by mental associations. Most substances when struck produce peculiar sounds, as wood, stone, metals. We distinguish easily the sounds caused by the movement of the winds and waves, the voices of beasts and birds, musical instruments of every kind.

The most important sounds are those of human speech. These are, in number, variety, and use, very wonderful. More than a hundred different sounds may be heard and distinguished in a minute. Every voice has its own character, by which the person and temper of the speaker are known, the quality of the statement, as well as the meaning of words. In a concert, one voice or one instrument may be selected and followed amid a number of other sounds. The pleasures and advantages of social intercourse to a great extent result from the sounds heard, which are the easiest, the quickest, the most agreeable mode of communicating thoughts and feelings. The chief worth of sounds is in their signification, and the knowledge of this depends on experience and association. The nature of the organ for speech, and that of outward objects, correspond to the nature and structure of our organ for hearing; and

* The impulses which produce sound pass through the atmosphere at the rate of more than 1,100 feet in a second, and still more rapidly through water and solids.

material properties and laws are combined with mental. On these harmonies all the advantages of Hearing depend.

The outward causes of sound, their distances and direction, are not really heard, and can be known only through a previous experience. This is evident from the mistakes often made, which are errors of judgment, and not false sensations. The causes of sounds are supposed to be *what* and *where* other causes of similar sounds have been known to be; but they may be different, similar sounds being produced in unusual ways. The rumbling of a cart in the street may be taken for distant thunder, and the voice of a ventriloquist may seem to come from above the ceiling, or beneath the floor. The sensations of sound, which generally come from outward material movements, sometimes come from within, from recent impressions on the auditory nerves, or from states of mind. In morbid conditions of the nervous system, sounds may be heard by one which others do not hear, there being no outward cause. A step may be heard outside the room, or a knock at the door, merely because these have been expected. Sounds which have ceased may be renewed without any return of the outward cause. Words may be heard when none have been spoken. The saying may be literally true, "I hear a voice you cannot hear," the voice being from within. Some of the sounds heard in dreams seem to have this origin. They are the usual sensations, but not from the outward causes by which such sensations are primarily produced.

That with two ears we seem to hear but one sound may be accounted for by the similarity of the sensations, the indefinite apprehension of their locality, and their reference to one and the same outward object.

4. Seeing.

The organ of vision is placed in the front of the head, where it is most useful; and it is protected by the cover-

ings required by its delicate structure and great value. The eye is enclosed in a thick, fleshy coat, called the *sclerotic*, in the front of which is the glass-like *cornea*, the white of the eye. Behind this is a screen variously coloured, called the *iris*, in which is an aperture of changing size, called the *pupil* of the eye. Between the cornea and the iris is the *aqueous* humour, and behind the iris the *crystalline*, a double convex lens, beyond which is the *vitreous* humour filling the body of the eye. The *sclerotic* coat is lined with a thin, dark membrane, the *choroid*, which is seen through the pupil; and on the back part of the interior of the eye is spread the *retina*, an expansion of the optic nerve. The sensations of vision are generally produced by some luminous object, directly or indirectly, most frequently by reflected light. When the lid of the eye is down some light passes through it, and there is a faint sense of vision; but much more is felt and seen when the lid is raised. Then the light which comes to the eye enters through the pupil, which is lessened or enlarged according to the degree of light; and this, being refracted by the media through which it passes, forms a small coloured picture on the back of the eye, like the picture in a camera obscura. Here in a little circle the many various objects in a room or landscape are depicted, distinctness of representation being secured by changes in the eye, like the changes in a spy-glass when objects are near or remote. These changes are made by involuntary muscular contractions, while by others which are voluntary the eyes are turned in whatever direction we please.

All that is seen is Light, with its various shades and colours; it may be only a *point*, but generally some *extension* is seen, and the boundaries which constitute Form, as it appears in a picture. No attention is requisite for the discernment of Light or of Form, when the latter is simple and strongly marked; but when it is complex and slightly

marked, attention is requisite. When once seen through attention, it is afterwards seen without. Thus the pattern on a papered wall may be at first invisible, though afterwards it cannot be overlooked. The various colours—violet, indigo, blue, green, yellow, orange, red—may be seen separately or in combination; they pass from one to the other by imperceptible gradations, and produce by mixture an endless variety of colours. The sensibility of the retina depends on the optic nerve, which connects the eye with the brain; but we are conscious only of the sensations in the eye.*

The sensations, commonly caused by the action on the retina of light from without, may be produced by pressure, by electricity, and by thought. A stroke on the eye will cause a flash of light, and bright circles of vision often result from internal pressure. The effect produced by luminous objects sometimes remains, or returns after a while, when they are no longer present. Thus objects seem to appear when they are no longer visible, and may seem of less or larger magnitude if referred to a less or greater distance. In morbid nervous conditions many objects appear to the eye which have no real existence, the pictures on the

* If the optic nerve be severed, there is no vision; for the nerves in the eye then become *dead*, and incapable of receiving the impressions which give the sensations of sight. This is known; and the same *deadness* in the nerves may result from injuries in the brain. But that impressions of any kind go from the eye to the brain is a mere conjecture, and the presence of anything like light and colour in the brain is contrary to all that is known of its structure. Why should such wonderful pictures be formed on the retina, if not to be felt and seen there? Nothing is seen that is not depicted there, everything is seen that is depicted there, and everything is seen exactly as depicted there. Light was once supposed to consist of particles sent forth by luminous bodies, but now it is generally regarded as a series of undulations, similar to those of Sound. When white Light is analyzed, it is found to consist of the colours red, yellow, and blue, or combinations of these; and of colours red and green, blue and orange, yellow and violet, are *complementary*.

retina coming from within, from preceding thoughts. This is frequently experienced in delirium, when such figures are supposed to be real; and in spectral illusions, when they are known to be entirely imaginary. Forms and colours from without and from within are combined, and apparently the same reality belongs to all, till this is disproved by the evidence of other senses or the testimony of other spectators. So in dreams and visions, when objects seem to appear, though not really present; the same sensations are felt, and the same pictures formed on the retina, which are primarily produced by outward objects.

Light and colour, visible extent and form, exist on the retina of the eye, and are known directly. They are perceived with the earliest consciousness of vision, when there is no knowledge of the brain, or the optic nerve, or of any outer world; but the distance of visible objects, their magnitude and solid form, which now seem to be directly seen, are known only through other sensations. They are learnt by a prior experience, and the thoughts and beliefs thus obtained are so combined with the sensations of sight, though different in nature and origin, that they seem to form a single present perception. That distance, magnitude, and solid form are not objects of vision is very evident; for they often do not exist where they appear, and do not appear where they exist, and what they are supposed to be is always according to the lessons of experience. What is really seen in the eye is a Primary Perception, and this becomes a Secondary Perception through additions from experience and association. The great difference between these requires further consideration.

CHAPTER III.

SECONDARY PERCEPTIONS.

1. THE difference between Primary and Secondary Perceptions is of great importance. The former belong to Consciousness, and what is directly perceived is always real; while the latter contain *associations*, which are closely connected with the former, but differ in origin and nature. The one arises wholly from the present, the other partially from the past. Primary Perceptions are intuitive, and are never false; but the Secondary are inferential, and are sometimes wrong. These two kinds of perception are found with other sensations; but they are most common and manifest in Vision. If the sensations and perceptions of Sight were alone, they would be of comparatively little value. What is seen by the eye itself makes but a small addition to the knowledge given by other sensations; but by association with other sensations vision becomes of the greatest use and importance. What the other senses have received, slowly and separately, is reproduced in thought easily and completely with a glance of the eye. The past is rightly combined with the present, and knowledge is indefinitely extended and increased. We really see only what may be seen in every picture—Light, Colour, Figure, and Position; to these *Motion* may be added, which is merely a change of position. These perceptions are primary. We seem to see Distance, Magnitude, Solidity, and many other qualities; but nothing is more certain than that these are not seen at

first, and that they are learnt only by experience. These perceptions are secondary; they are wanting when the associations are absent, as in the case of those born blind; they are always found where these associations have preceded; they vary at different times and in different persons according to association, and may be either right or wrong.

2. That the *supposed* Distance of visible objects is not really seen is evident in a well-drawn picture, where objects which are very near seem to be far off. That the *real* distance is not seen is evident from the apparent nearness of distant mountains and the heavenly bodies. There is no regular agreement between the supposed and real distance; but objects appear to be near or far away, as they are seen more or less clearly and distinctly, with a greater or less apparent magnitude, with parallel or converging lines, with or without intermediate objects. These are lessons of experience early learnt, and so combined with present sensations that they seem to make a single perception. The sensations are many and transient, while the object associated with them is single and permanent; and hence it receives most attention, and may be exclusively regarded and remembered. We seem to see directly the distances of many objects, while quite unable to state even to ourselves the primary perceptions from which the secondary are derived.

In the same way it appears that the Magnitude of objects is never seen; and this follows from what is true of Distance. The same visible object will seem to be large or small, as it is thought to be far away or near. The largest objects appear small at a distance, and the smallest appear large when very near. Whatever in a picture increases the supposed distance also increases the supposed size of any object. When *distance* is known, the real magnitude is learnt from the apparent; and when the *magnitude* of an object is known, its distance appears, and the magnitude

of other objects. Thus human figures show the size of a building, and trees the height of a hill.*

That solid figure is never seen by the eye is shown in the same way. There is often no *solidity* where it seems to be seen, and real solidity where it is not seen. The parts of every *solid* are at different *distances* from the spectator, and if distance is invisible, solid figure must be equally so. In pictures, and especially in stereoscopic views, where there is no solid figure, light and shade, with the direction of lines, give the exact appearance of solidity. In all these cases the lessons of former experience add associations to sensations, and change primary into secondary perceptions.†

In the same way it is evident that other qualities are not directly seen, such as hardness and softness, roughness and smoothness, the nature of wood, stone, metal, water, the delicacy of the skin, the expression of the countenance. What is seen is blended with what is suggested; and when things have been frequently combined, that which is chiefly regarded may appear to be the only visible object, though in fact it is not seen. When outward objects are known to be the *causes* of sensations, attention may be wholly given to them. If their nature, locality, size, and figure are well known,

* The *magnitude* of an object is very different from its *extension*—the latter being a single perception, while the former is always comparative. Objects are large or small, only as they are considered in relation to some others. In different connections the same object will appear to be either large or small. Common mistakes in regard to *magnitude* do not make possible similar mistakes in regard to *extension.*

† The *motion*, which is perceived on the retina of the eye, is sometimes referred to one outward object and sometimes to another. In a moving railway carriage, trees and houses seen through the window often seem to move; and when the carriage is stationary it seems to move, if another train is seen in motion. The sun and stars seem to move, because the earth really moves. Appearances would be exactly the same, whether the sun revolved around the earth, or the earth revolved on its axis.

these only are regarded, and the many different transient sensations they produce are immediately forgotten. If we walk towards a tree or house looking steadily to it, we seem to see that it does not change, but its visible appearance must alter with every step we take. A multiplicity of varying sensations will be experienced, but they suggest one object in the same place and condition; and these momentary sensations are forgotten, while the object inferred from them is alone considered and remembered.

3. The connection of the sensations of vision with outward objects is very remarkable. The colour which is in the eye, appears to be in a distant object. The transfer of this perception is the more natural from the isolation of the nerves of the eye. No relation to the other parts of the body being directly known in vision, the colour is not seen to be near or far off; the figure is not seen to be plane or solid, nor the magnitude to be small or great. It is not that what is first *seen* to be near, plane and small, afterwards seems to be *seen* as far off, solid and large; but no knowledge of distance, size, and solidity being given in *vision*, all that is known of them comes from a previous experience, which adds them to the sensations of vision, and so seems to alter and enlarge.

The picture on the retina of the eye is *inverted*, but the outward object appears *erect*. This admits of the same explanation. The relation of the sensations on the *retina* to those around, and in other parts of the body, does not appear in vision, but is learnt entirely from other sensations. The movement of the eyes upward and downward, and much more the movement of the hands on a visible object, will show whether one part is above or below; and the sensations of vision are referred to the positions thus known. It is not that we first see objects *inverted*, and then see them to be *erect;* but nothing of this *position* is seen in vision, and what seems to be seen is the knowledge

gained by other sensations, connected with what is seen on the retina by frequent associations, as it is with *distance.*

There are *two* pictures on the *two* eyes, yet in general only *one* outward object is seen. Thus it is the same in *seeing* as in *hearing*, and from similar causes. The sensations are so like that they are not easily distinguished, and when projected to a distant object they coincide and become one perception. The duplicity of the primary perceptions is evident from the two objects which are indistinctly seen, when the focus of the eye is fixed for one, and another is in the same direction but at a different distance. In temporary squinting two objects are perceived, and also for a time when habitual squinting is removed. In stereoscopic observations, when two pictures on paper agree with the pictures on the two eyes, only one object is perceived. Sometimes these pictures differ considerably, and the views of two sides of a near object are combined to form a single solid figure.

4. As before observed, there must be something *intermediate* between the Mind and any distant object, but nothing is known to exist between the Mind and its primary perceptions of Body. The luminous figure on the retina of the eye is intermediate between the Mind and the *moon*, whenever this is seen; but there is no *image* or *idea* intermediate between the Mind and the *picture* of the moon on the retina of the eye. And so it is with all corporeal perceptions. The affections of the body, which through association are transferred to distant objects, are *intuitively* perceived; but they are not *perceived* to be where they are *supposed* to be. The distance, magnitude, and solidity of the moon are merely *thought* of, and cannot be *seen;* but the colour and form are *seen*, and not merely *thought* of.

In Secondary perceptions there is an association of Belief as well as of Thought. Certain *colours* and *lines* have been often connected with certain *distances* and *magnitudes*, and

therefore the presence of the former suggests thoughts of the latter; but there is more than the association of *ideas*. Often repeated experience produces a *belief*, gradually becoming stronger and stronger, that the objects formerly seen *continue*, and that they are *really* combined as they are thought of. The simple association of *ideas* would not give the *knowledge* we have of outward objects, of distances and magnitudes, or enable us to distinguish imaginations from realities. These *beliefs* or *convictions* will be subsequently considered; they are of the greatest importance, and belong to all our knowledge of Nature. The two elements in vision —the intuitive and the inferential—are not easily separated, and therefore at first in copying Nature the *real* figure is drawn, and not the *apparent;* but practice soon enables the artist to draw the latter, separating at once the primary from the secondary perceptions. The *belief* belonging to secondary perceptions is at first feeble, and becomes strong as experience increases.

5. Very wonderful are the extent, number, and variety of objects known through the sensations of Sight. We see thousands of stars in the sky, and of forms in a landscape—mountains, forests, meadows, rivers, bridges, houses, gardens, trees, flowers, beasts, and birds. We see the countenances and movements of men, women, and children; their works of industry and skill, and the books in which all the treasures of knowledge are preserved. All these outward objects, immeasurable and innumerable, produce such impressions on a small space at the back of the eye that their existence, nature, position, and changes are made known to us clearly, surely, quickly, and with little effort. We turn our eyes in one direction and another, and the world and its inhabitants are present to our view. Light is pleasant, becoming painful only with a hurtful excess; and many colours and combinations are more agreeable than others. But the chief value of Vision is in the knowledge thus given. This comes

to us from reflected light, according to the nature of the objects seen, and the structure of our eyes; and also according to the lessons of experience, the knowledge given by all other senses being reproduced by association, with various emotions and affections.

6. The Secondary perceptions of Sight are in general trusted by all sane persons, though it is impossible to trace them back to their origin, and to show how they have been gradually formed. We do not *see* that the objects around us are at the distances, and have the sizes and qualities which we attribute to them. These are not *seen*, but only *believed*, and not as necessary, only as probable, but probable to such a degree as to make doubt in most cases absurd, if not impossible. The *possibility* of error must belong to all *secondary* perceptions, and some are proved to be erroneous. But this is no ground for doubt respecting *primary* perceptions, nor respecting secondary, unless it appears that they are to be referred to a variable or partial experience. In such cases they will be sometimes true and sometimes false, and there is seldom much difficulty in distinguishing these. The senses are never untrustworthy, but inferences blended with intuitions may be wrong, where experience is not sufficiently extended to make the past a sure guide for the present and future. Children soon learn real distances and figures, and distinguish pictures and reflections from real objects. All men are daily taught that first impressions may need the confirmation of further evidence. Much that is learnt through the senses can be thus verified in some measure, though in most cases this is needless and impossible. With a little consideration the chief causes of error may be discovered, and much knowledge of the greatest interest and value is gained with the highest certainty. The chief errors attributed to sensations result from the unusual state of the senses, or their object, or the medium through which objects are perceived. The impressions are interpreted according

to usual experience, and therefore the inferences must be wrong when the experience is unusual. Wrong perceptions are corrected by enlarged experience—by the repeated use of the same sense, or by the exercise of another sense, or by an appeal to the senses and perceptions of others, or by sure inferences from our own former experience or that of others; this prior experience being so large and constant as to overcome, naturally and reasonably, any single present perception. The strong convictions of truth and reality, which universally accompany most material perceptions, result from the combination of many causes, which, though slight singly and separately, when united form the strongest and surest evidence. The perception belonging to one sense is repeated again and again, and certitude increases with every repetition. It is found to agree with the perceptions belonging to other senses, and is strengthened by this agreement. And it is confirmed by the similar experience of other persons. The certitude thus produced is permanently established, by the daily and hourly fulfilment of consequent expectations. Therefore no sophistry can shake man's belief in the reality of the outward world. Instinct is not too strong for Reason, but Reason approves and confirms the beliefs which are naturally produced, and verified by uniform and universal experience. Such beliefs are inevitable and universal. It would be impossible to calculate the improbabilities of the suppositions that must be accepted, if these beliefs are rejected.

All knowledge of the external world comes to us through the Senses, but much more is requisite than the faculty of Sensation. Attention, Memory, and Reason are equally necessary for the knowledge we have of Material objects; and evidently remembrances and inferences are states of Mind, and not of Body. Secondary perceptions give only what has been before given with other sensations, and are only in part liable to error. Association produces nothing,

but merely connects the new with the old, sometimes misplacing what is real. Sensations and Primary perceptions belong only to the individual. Secondary perceptions, and inferences of various kinds, respect objects which existed before they were known by us, and which are known by others as by ourselves.*

* Matter, as distinguished from Mind, is that which is *felt*, but does not *feel*, which is *known*, but does not *know*. No sane persons suppose that the sticks and stones, which they see and handle, also feel and know as they themselves do. Matter has both *substances* and *properties*; the former *continue* and are the *same*, when the latter *cease* or *change*. Material *substances* are of two kinds, the one being *sensible*, and the other not so. The former consist of Molecules, the smallest *perceptible* objects. Larger bodies are combinations of similar or different *molecules*, and these are the *substances* first known and commonly referred to. This kind of *substance* is not imperceptible and unchangeable. There is the same *substance* in Water, though the *properties* are different, as it has the form of a solid, or a fluid, or a vapour. The other material *substance* consists of Atoms, which are always *imperceptible* to the senses, as well as *indivisible*. Atoms are known only by inference; they are of various kinds, and all bodies are combinations of the same or different elements. These elements or atoms are the *substance*, which is known only by inference, which never changes, which the largest experience shows to be indestructible and unchangeable.

That bodies are *throughout* what they appear to be on the surface, is an *inference*, sometimes right, and sometimes wrong.

That bodies *continue* to be what they are and have been, is also an *inference*, which may be true or not. These Beliefs are the result of Experience, and are according to its extent. They are different from Intuitions, and are to be separately considered.

Material *properties* are commonly divided into the *primary* and *secondary*. Primary qualities are those which resemble sensations, the property attributed to external bodies, being *like* what is first known of our own. Extension, motion, figure, divisibility, impenetrability, are of this class. Secondary qualities are those which have no such resemblance; the properties attributed to external bodies not being *like* the impressions they make, but either the sensations themselves or their supposed causes. The *sweetness* and the *heat*, which are *qualities* of external bodies, have no resemblance to the *sweetness* and the *heat*, which are *sensations* belonging only to our own; and the *colours* of

outward objects belong only to the eye. Primary qualities, as they exist in outward objects, are known because they are *like* the affections of our senses; but Secondary qualities are not thus known, because they are not *like*.

Primary qualities exist in the Objects known, and therefore are the same to all intelligent beings. What is a triangle, or a square, or a circle, to one mind, is the same when known to every mind. Secondary qualities are transferred sensations, or their supposed causes, and therefore they are the same only to those who have such sensations. What is sweet, hot, red to one, may be bitter, cold, colourless, to others.

Some further observations on Substances and Properties are given in Appendix *A*.

DIVISION II.

SPIRITUAL INTUITIONS.

CHAPTER I.

SELF—UNITY—VARIOUS STATES.

1. WITH all direct knowledge of states of Mind or Body, there is some direct knowledge of ourselves. The Self which knows is perceived with every *object* that is known. We are equally conscious of this Self, and of the various *states* of feeling and perceiving in which it exists and is known. The former is not known before the latter, but both are intuitively apprehended at the same time. We do not infer the *self* from the *state*, nor the *state* from the *self*. It is impossible to feel or perceive anything as we do, without knowing directly that it is *our* feeling and perception. Much that is known of ourselves is *inferential*, but not all. If any *state* could be known without the *self*, there would not be in it any ground for inferring the *self;* but no proof is required for what is self-evident. The *nature* of the Self is inferred from many experiences, but of its *existence* we are conscious in every single experience. We cannot perceive Body without at the same time perceiving Mind; and it may be questioned if we ever perceive Mind without some accompanying perception of Body. We are not conscious of Mind till we are conscious of Body, and the *knowledge* of Body being a state of Mind cannot exist without

some knowledge of Mind. We cannot lose the consciousness of Mind without losing also the consciousness of Body, but we might lose the latter and retain the former.*

As there is some consciousness of sensations without the exercise of Attention, but a more clear and complete knowledge with this, so it is with the consciousness of Self and its various states. No knowledge precedes that of ourselves, and nothing is known more directly and certainly than the present existence of the Self, of which every one is conscious. This knowledge is constantly and necessarily combined with all other knowledge. Our knowledge of the existence of the Soul is not a *belief*, but an *intuition*. We may *believe* the proposition *I am*, comparing the *verbal* statement with the *reality* of which we are conscious; but the primary knowledge of Self precedes all *belief* respecting it. As its prior existence is *remembered*, so its continuance is *inferred;* but its present existence is neither an inference nor a remembrance, but simply an Intuition.

2. The Unity of Self is known intuitively as well as its existence. There is but one *subject* of all sensations and perceptions. The same I feels pressure and heat, resistance with the right hand and the left; and the same I also tastes and smells, hears and sees. The parts of the body affected in sensations are many and different; but the Mind, the Self, which feels and perceives, is not many, but one. If *plurality* in the objects known showed a *plurality* in the Mind, there would be as many *minds* as there are *organs* of sense; as many as there are distinguishable *parts* in a material object. But with all our knowledge of plurality in the objects known, and in mental states, there is the consciousness of one Mind, the same Self. The Self which is the *subject* of all sensations, is also the *subject* of all remembrances and inferences, of all mental emotions and affec-

* The Self thus known is the real *substance*, the permanent *subject*, to which *properties* belong.

tions. The I that sees a picture and hears a voice, is the same I that recollects and understands, admires and loves, regrets and resolves. Sensations are in various parts of the body, but all are felt and perceived by one Self. Thoughts and beliefs, emotions and affections, are very different mental states; they are not perceived in any part of the body, nor have they *extension*, or any material properties. But they are known to belong to the same Self. The unity of Self is declared when we say, I see and remember and regret and resolve. The consciousness which shows that there is a Self as well as certain states, shows also that this Self is not many but One.*

3. MENTAL STATES are known in consciousness, and only there. When anything is known, we are conscious of *knowing* something. In all Intuitions the *object* perceived is distinguished from the *state* of perceiving. It is so when the mind is *passive*, and still more when it is *active*, when there is attention and comparison. We are conscious of the state of *feeling*, as well as of something *felt;* of the states of *hearing* and *seeing*, as well as of that which is *heard* and *seen*. The *states* are always transient, but both the *self* which feels and perceives, and the *object* felt and perceived, are in some measure permanent. There are other states of Mind besides *intuitions* of which we are equally conscious. When what is known intuitively ceases to be present, it is *thought* of. Some *representation* is made in the mind, it may be without any *belief* of reality, past, or present, or future; or it may be with some such *belief*. We are conscious of these states

* In another sense the Body is *one*, though it has many members. We know this, because the parts are so connected as to form *one* living whole. But the Unity of the Mind is quite different from this. The oneness of Self is directly perceived, and it is declared by every assertion of I and Me. Only one Self is discerned in consciousness, and nothing is perceived from which more than one can be inferred.

of Mind—of *thinking* and *believing*—and though we are in the body when we *think* and *believe*, these are not sensations, nor their shadows or reflections or images. Sensations evidently could not exist without the Body, but other states of Mind have no such necessary dependence on anything material. We discern in them no figure, or extension, or place. Only in *sensations* is there consciousness of any material object; and only as *sensations* accompany other mental states, is there any apprehension with them of material properties. We think and believe in various ways, but of these states we can know nothing except by consciousness; and we can be conscious of these states, only when there are the natural causes and occasions of thinking and believing.

It is the same with all that belongs to our Spiritual nature. Mental pleasures and pains are evidently different in their nature and causes from the sensations of the body. They can be known only by a conscious experience, and this follows the presentation or representation of their causes. These feelings are distinguished as Joy and Grief which are not sensations; they must be *felt* to be *known*, and are felt on many occasions, and from many causes. Besides these Emotions we are conscious of various Desires and Aversions, which directly prompt to some action; and of various Affections, which respect sensitive objects, and especially those which have a measure of intelligence and sensibility like our own. Volitions are another class of Spiritual states—*choosing* or *willing* being different from *desiring* or *wishing;* and human character and conduct present something different from other objects, and produce peculiar sentiments. The *right* and *wrong* discerned in our dispositions and purposes when we reflect on ourselves, or on those who have similar knowledge and ability, are peculiar to such objects. Equally so are the sentiments of *approbation* and *disapprobation* with which *moral* right and

wrong are regarded. These *states* are known only when they have been experienced, and they can be experienced only when their objects are presented and considered. Intuitions, Thoughts, and Beliefs of every kind, belong to Mental Science; Emotions, Desires, Affections, Volitions, Moral perceptions and sentiments, belong to Moral Science. Intellectual and Active Principles are equally parts of Human Nature, known only by Consciousness when the various objects are presented, which correspond to our various capacities of knowing, feeling, and choosing.

No study of sensations, or of the nervous system, or of any material objects, could give the least knowledge of thought and belief, of joy and sorrow, of love and hatred, of purposing and choosing, of approval and censure. Only by the experience of these *spiritual* states can there be any knowledge of what they are. Their whole nature is learnt entirely from Consciousness. Sensations will show a little of what is presented in a printed page, when the language is not known; but this little is insignificant and worthless, compared with what is learnt when the words are understood. It is so with all external knowledge, apart from that which is internal. All that is most precious and noble, all that much interests human minds, all the chief causes of joy and sorrow, all that is admired and beloved, all that is a permanent possession, is to be found within; and *material* objects are esteemed because of their real or supposed connection with what is *spiritual*, and known only by internal consciousness. The elements of the highest knowledge can be gained only by looking within. In Corporeal Intuitions the *subject* and the *object* are different; but in Spiritual Intuitions they are the same. As all material objects seen or felt are composite, so are all mental states. With most sensations and perceptions we have also some thoughts and beliefs, some emotions and affections. Things commonly combined may often be separated, and where

this is not possible they can be separately regarded, and so known more clearly and completely. All the spiritual states, of which we are conscious, require separate consideration to be rightly and fully known. The first knowledge of all consists of Intuitions, which we have only when objects are present. Some Beliefs, respecting the Spiritual nature of Man, may be properly considered before advancing to other Intuitions, and these are noticed in the following chapter.

CHAPTER II.

MENTAL CAPACITIES, IDENTITY, IMMATERIALITY.

1. MENTAL capacities are inferred from the various States of Mind of which we are conscious. We know intuitively only present states, for of these only can we be conscious now; but as something permanent in *matter* is inferred from transient appearances, so after a repeated experience of *mental* states, we know that the nature of Mind is such that they may be expected again. The *capacity* existed before it was exercised, and continues when it is not exercised and does not appear, and this *capacity* will account for the similar *states* which have been and will be. We are *conscious* of sensations, thoughts, and beliefs, and *infer* corresponding mental capacities. Some of these states are more or less *voluntary*, others not so; and the *capacities* inferred from the former are called Faculties, while those of the latter are more properly called Susceptibilities. Thus we have the Faculties of Attention, Abstraction, Imagination, Reason; and Susceptibilities to Joy, Sorrow, Hope, Fear. All *states* of Mind are numerically different; but some are similar, and others dissimilar. Those which are so like, that the *experience* of one might produce the *expectation* of the other, are referred to the same *capacity*, no other being required; while those are referred to different *capacities*, which have not such resemblance. From the state of *remembering* we infer the faculty of Memory, and from the state of *reasoning* the faculty of

Reason; from the state of hoping and fearing the susceptibilities of Hope and Fear. But the faculties of Memory and Reason are the same, whatever we remember or infer; and the susceptibilities of Hope and Fear are the same, whatever the object we desire or dread. These Faculties and Susceptibilities are not different parts of the Mind, as limbs and organs are different parts of the Body; but they belong, as the states, to the whole Mind, the one undivided Self.*

2. Mental Identity, referring to the past as well as the present, must be in part beyond the limits of Consciousness, what is known intuitively being combined with what is remembered or inferred. That the Mind which feels and sees in the present minute, is the same that felt and saw a few minutes or hours ago, every one knows with perfect certainty. Any real doubt would be proof of insanity.† In respect to past months or years the conviction may be

* Objects evidently very *different* are by some declared to be the *same*, because there are other intermediate objects which make a series of imperceptible gradations. Thus Intuition is said to be the same as Memory, and Memory the same as Reason. But if this were true, then it might be said with the same propriety that blue and red were the same, pleasure and pain, love and hatred, right and wrong. The multiplication of what is *insensible* will make what is *sensible*, the increase of what is *imperceptible* will produce what is *perceptible;* but the multiplication of *nothing* will produce *nothing*. The difference between the lifeless and the living, the vegetal and the animal, the animal and the human, are not less real and important, because there are objects respecting which we do not know their proper class. As the *extremes* in a series of objects, however different, must have something in common, so the *nearest*, however like, must have some difference; and the differences which do not appear in the nearest are as real, as those which are manifest in more remote objects.

† Without any difficulty we can *think* of the states as merely *successive;* but we cannot *believe* that there is only this *succession* of states, when we remember that the present *self* was the subject of some former state.

sometimes less, but it is often equally direct and sure. Of many things done several years ago, we are as certain that *we* did them, as we are of the events of yesterday, or our present existence. That some remembrances are erroneous is no reason for supposing that all may be a delusion, and this is a supposition which no sane mind ever receives. What we do not remember doing we may surely know that we did, through the testimony of others, or from our own inferences. We know but little directly of the Self which is the *same* from youth to old age, whatever changes there may be in state, attainments, and character; but that there is in each person such a *permanent self* is known as surely as any present reality. Mental identity is requisite to Personal identity, and is universally accepted and believed, as the condition of all rights and duties, of all moral responsibility, of all permanent social affections and relations. Our present bodies differ from our former bodies, as our clothes do; but we *ourselves* are the same in all outward and inward changes.*

3. The Immateriality of Mind is simply a negative expression for what is not known. We know that the Mind has perception and thought, emotion and affection, choice

* The *identity* of the Body is different from that of the Mind. We say that our bodies are the same yesterday and to-day, because though some particles have been changed nearly all are unchanged. This *identity* is only partial, it is only inferred, and it cannot exist when the change is very great. But it is known generally that all the particles of the body are continually changing, and that after several years none remain really the *same*. Therefore when the body is said to be the *same* in youth and in old age, the meaning of the word is changed. Whatever differences there may be, an object bears the same *name* if these differences come gradually, and singly are so small as to be of no account. This *identity* is therefore *nominal*, and not *real*. The identity of Mind in youth and in old age is *remembered*, and not merely inferred, and it is *real* and not *nominal*. The *substance* of the Mind is known, as well as the *substance* of the Body; and the life-long persistence of the one, as surely as the more brief continuance of the other.

and approval; for these are states of Mind of which everyone is conscious. But we have no consciousness that the Mind has any shape, size, colour, or is in any way extended and divisible. We cannot even think of Mind as circular or square, hard or soft, yellow or blue; nor have *thoughts* and *affections* any of these *material* qualities. Mind perceives material qualities and objects, but it does not perceive itself to be material. We remember the past and anticipate the future, without any consciousness of material *extension* in these remembrances and anticipations; we admire and approve, without any consciousness of material qualities in these mental affections. So we can think of Mind apart from Matter, though we commonly think of Mind with both body and clothes. Whatever may be the connection of the Mind and the Brain, we cannot identify that in us which reasons and rejoices and remains ever the same, with the collection of vesicles and fibres in the head, which are continually changing. The Mind is not diminished when much of the brain is removed, any more than when the hands or feet are cut off. Of all parts of the Body it may be said that they are to the Mind, as clothes, or habitation, or instruments; but that Mind is material is without any evidence, either from Consciousness or Reason. It is not possible to imagine any objects more dissimilar, than the states and qualities of Matter and Mind, of Body and Soul.

It cannot be pretended that we are conscious of the locality, the length and breadth of thoughts and beliefs, of emotions and affections; and if not conscious of the *extension* of the states, we cannot be conscious of the *extension* of the Mind to which they belong. If it be supposed to have *material* qualities, these can be known only by inference, from *connections* and *correspondences*. But these are no evidence of *identity*. They are often found in *different* and *dissimilar* objects, and therefore from them *identity* cannot be inferred. However constant the connection may be,

when there is more of unlikeness than of likeness in the objects compared, further *differences* rather than *resemblances* are to be inferred; and the *identity* of objects, dissimilar in nature, and known in different ways, is a conjecture to which experience gives no support, and which has no advantage, either speculative or practical. It is said to make science more simple and intelligible; but there would be a similar advantage in identifying hearing and seeing, or taking any single part for the whole, or any two different objects for one and the same.*

* Immortality also is a negative term, and the immortality of the Soul is primarily the absence of a *death* with and like that of the Body. If the Mind were the Brain or its function, it must cease to exist with the dissolution of the parts which constitute a living body; but if they are different, the cessation of life in the one is not the end of the other. If the Mind were *composite*, its life would cease with the dissolution of the parts; but if it is *simple*, there can be no such death. Experience shows no destruction of any simple substance, and therefore cannot teach the mortality of Mind. If the soul existed only for the Body, it might be expected that they would perish together; but all that shows that the Soul transcends and excels the Body, shows that they have not the same destiny. The *moral* nature of Man gives more evidence of a future life than the *mental* nature alone, and the statements and promises of the Bible give a larger and better hope than present experience. The *immortality* of the Soul, as its *existence*, depends on the will of the Creator, and does not follow from *simplicity* alone. As the beginning of a conscious life was not by the combination of parts, so the end might be without any dissolution of parts.

Further observations respecting the Brain and the Nervous System are given in Appendix B.

DIVISION III.

METAPHYSICAL INTUITIONS.

CORPOREAL and Spiritual Intuitions respect what is Natural or *physical;* but besides these there are other Intuitions, which are preternatural or *metaphysical.* Nature is that of which all the parts began to be what they now are, being *born* or having *become;* they differ greatly from one another, and they are continually changing. But with such objects we perceive others, of which it is impossible for us to suppose that they began to be, or could ever be different from what they are now found to be. All the perceived parts of these objects are alike, and they always appear to be exactly the same. They have peculiar interest and importance, and require separate consideration.

CHAPTER I.

SPACE.

1. SPACE is something perceived with every perception of Body. That we seem to perceive the portions of Space in which our bodies are felt, and where they move, is quite evident; and there is no reason for supposing that these apparent *perceptions* are unreal and imaginary. Unless some portion of space were *perceived*, none would be *thought* of; unless some had been *present* to the mind, none could be *represented*. Whenever we perceive *body* we also perceive *space*, nor can we ever think of *body* without the thought of *space*. We cannot see or feel *space* without *body*, but we can think of *space* beyond *body*.

The power of Intuition which gives the knowledge of Body, at the same time gives the knowledge of Space. There is the same faculty of Intuition for both; but the objects perceived are very different, *body* being movable and sensible, and *space* being immovable and imperceptible to the senses. Because we cannot *perceive* body without space, nor space without body, the power of Intuition is one and the same. But their *qualities* are not the same, and *beliefs* respecting *body* and *space* are very different; and therefore the *objects* must be different.

The first knowledge of Space is *intuitional*, and not inferential. We do not know *space* before *body*, nor *body* before *space*, but both at the same time, and by the same intuition. The *perception* of space differs from the *thought* of space, as

much as the *perception* of body differs from the *thought* of body. Of both we have *perceptions* and *thoughts*, and these are easily distinguished. The Space we perceive is not a thought, or idea, or conception of the Mind, but an objective reality. This is known by the evidence of consciousness; and we have no other evidence for the existence of any sensations, of any bodies, or of any thoughts. The Intuitions of Space, as those of Body, show an object equally present, real, and external to the Mind, by which it is perceived.*

2. Space has been described as a *mental form* imposed on *matter*, a *thought* connected with bodily *sensations*, or an *inference* from them; or as the object of another power of *intuition*. But these statements are contrary to the evidence of consciousness, and they seem to have arisen from a confusion of the knowledge of Space which is *intuitional*, with that which is *inferential*. Of space and body our first knowledge is *intuitional*, but the greater part is *inferential*; and while the *intuitions* of both are similar and simultaneous, the *inferences* are different in principle and extent. But there is nothing in what is *inferential* to affect the reality of

* The *idea* of Space is an *abstract idea*, but the Space itself is not an *idea*, nor is the first knowledge of Space *representative*. All *abstractions* are coextensive with the *objects* to which they belong. The abstractions *hardness* and *humanity* are of the same extent as *hard bodies* and *human beings*, beginning and ending with them. But Space is beyond and was before all material substances, known or thought of; and it never changes, while they are ever-changing. The characteristics on account of which the objective reality of Space has been denied are *priority*, *necessity*, *universality*, and *unity*. But these respect *beliefs*, and not *intuitions*. It is allowed that the actual *knowledge* of Space is not *prior* to that of Body, and no thought of the former precedes the perception of the latter. A *capacity* for knowing both, precedes the *knowledge* of both, and in this respect there is no difference. All that is ever known of *matter* depends on the *prior* capacity for knowing it; and so all that is ever known of *space* depends on a *prior* capacity for knowing it. In *intuitive* knowledge there is the same capacity; for there cannot be the one without the other; and there is the same certainty.

that which is *intuitional.* There is no intuitive knowledge superior to that of Space; no evidence of any reality nearer, clearer, stronger. If the reality of Space be rejected, there can be no knowledge of our own bodies or of any other. All knowledge of what is material must be equally unreal and imaginary. That we can *reason* respecting Space when we have only Conceptions, as well as when we have Intuitions, is because the *idea* fully represents the *real* object, not because there is no reality.

3. Some portion of Space is known intuitively, and some of its properties. It is known to exist, to be extended, divisible, and stationary; to have length, breadth, depth; to consist of like and continuous parts; and to possess the same figure, position, and magnitude as the Body which exists in it, and with which it is known. But Space is unlike Body in that all its parts are exactly similar; it never moves or changes, and excludes nothing. It therefore cannot be Body, or a property of Body. All other knowledge of Space is inferential. If there were no Space, there could be no Body. This is a conviction respecting the order of *existence.* If there were no perception of Body, there could be none of Space. This conviction respects the order of *knowledge.* In these two orders the antecedent is not always in time before the consequent, and sometimes the order of *existence* and the order of *knowledge* coincide, while sometimes they are contrary.

Body is in Space by filling it with sensible objects, which share some of its properties, and exclude all similar bodies. Mind is in Space by knowing and acting there; it is not perceived to share any of the properties of Space, and it does not exclude any other objects, material or mental. When Body is in Space, the same Figure evidently belongs to both. When the former is removed, the Figure of the latter can no longer be discerned by the senses, but it remains unchanged, and is the object of intelligence and thought.

CHAPTER II.

DURATION.

1. MUCH that has been stated of Space may be repeated of Duration; for in some respects they are similar, while in others they differ. When conscious of any state of Mind or of Body, we are also conscious of the Duration in which it exists. We cannot perceive any sensation or emotion without perceiving some duration, nor can we think of any object as existing without duration. We cannot perceive duration alone, but we can think of it alone, as existing before any object perceived with it. The power of Intuition which gives the knowledge of Mind and Body, gives also the knowledge of Duration. But our *beliefs* respecting Duration are like our *beliefs* respecting Space, and differ from our *beliefs* respecting natural objects. We do not perceive Duration before perceiving something else, nor some other object before perceiving it. It is not a *form* of Mind, a thought, or an inference; but an object perceived with all other objects, equally real and external. It is perceived to exist for a moment, and then to pass away. We could not *think* of a long duration, if we had not *perceived* a short. A very small portion is perceptible in consciousness; but this when gone is remembered, and so it is preserved by Memory, and indefinitely enlarged.

2. Duration is known intuitively to exist, and when remembered it is known to be extended, divisible, and ever moving; to have parts continuous, and all exactly similar;

and to share the position and magnitude of the objects which exist in it, and with which it is known. All co-existing objects are in the same Duration, while no two bodies can be in the same Space. Without Duration there could be neither Mind nor Body, and without the knowledge of these Duration could not be known.*

3. There are convictions respecting Duration similar to those respecting Space. We believe that both are necessary, infinite, eternal, uncreated, indestructible, unchangeable. Whether these *beliefs* are true or not, there is nothing in them to lessen the evidence of the real existence of Space and Duration, and of their properties, as these are known by Intuition and discerned in Consciousness. If Duration were unreal and imaginary, so must all knowledge be both of Mind and Body; for we cannot think of either as existing without Duration. Many errors have resulted from neglecting to distinguish between what is Intuitive and Finite, and what is Inferential and Infinite.

* There are differences in Duration corresponding to the three dimensions of Space. All objects now existing in *one* direction of thought, are in the same *duration*, and this is like the *length* of space. All objects now existing in *every* direction of thought, are also in the same *duration*, and this is like the *breadth* of space. But all the *past* and the *future* must also be thought of as in *duration*, and this is like the *height* and *depth* of space. That the *motion* attributed to Duration does not belong to the observer, as the motion often attributed to stationary objects, is evident from the consideration, that different past periods are at different distances from the observer, not only during his life, but also in preceding ages. Space may be defined as that, which is perceived only *with* all bodies, and without which none could exist. Duration as that, which is perceived only and always *with* both matter and mind, and without which there could be neither.

DIVISION IV.

INTUITIONS OF COMPARISON.

SOME objects—corporeal, spiritual, and metaphysical—are partially known without Comparison; but for others this is always requisite, and they need a measure of voluntary attention.* Numbers and Relations generally, if not always, are of this description. Some may be perceived intuitively, but not without attention. We perceive the objects compared, and at the same time we perceive some numbers and relations. These can never be *perceived* alone, though they may be *thought* of alone, and in these respects Number and Relation are like Space and Duration; but they differ in other respects. Number and Relation cannot be thought of as *existing* apart from the objects to which they belong, but begin and end with them; while the same Space and Duration, which are perceived with any objects, are thought of as existing, and believed to exist, apart from these objects. On account of the peculiarity of their origin and nature, the Intuitions of Number and Relation deserve separate consideration.

* Comparison is requisite for the complete knowledge of all objects, but not for the partial knowledge of many. That an object belongs to any class, or should receive any name, can be known only by comparison; but objects could not be compared, if there was not some knowledge of each separately.

CHAPTER I.

NUMBER.

SMALL Numbers are known intuitively with the things to which number belongs. If we see two or three dots or lines, we can see that they are two or three; so the number of two or three sensations will be seen. Number is not a thought respecting objects, nor any state of mind, but something in what is perceived. It is as real and external as that with which it is perceived, and requires no other faculty of Intuition. Only *attention* is required for the *intuition* of small numbers. These are seen with the objects to which they belong, and cannot be seen without them. The objects may be different, but the number exactly similar. Two, three, and four belong to dots and lines, to triangles and circles, to sensations and thoughts, to men and stars; and so with all objects and all numbers.

One is the beginning of numbers, and they are all only repetitions of Unity. That is One which is *indivisible*, or which is *separated* mentally from every other object. Thus the smallest perceptible portion of body, or of space, or duration, is *one;* and so is the indivisible *self* of which we are conscious. A line also is *one*, though it has many points; a triangle is one, though it has three sides and three angles. In the same way a plant or an animal is *one*, though it has many different parts. Through their union many things make but *one* whole. A collection of similar things may be *one*, one collection being distinguished

from another. Many *unities* can be known only by *inference;* but some are known by intuition. As small numbers are thus seen, so are the results of single small changes. We see that two added to two make four, that two taken from four leave two, that two multiplied by two produce four, and that four divided by two give two. These results are not *thoughts* or *inferences* or *beliefs*, but *intuitions*, known with the immediacy and certainty of all intuitions. In the same way the axioms of Arithmetic are *seen* to be true in single small cases, and then *believed* to be true universally. That as it is with small numbers and a few objects, so it is and must be with the largest numbers, and with all objects, is an *inference* of Reason from what is perceived of the peculiar character of Number.

Large numbers can never be either seen or thought of as small numbers are. They are *known* as multiples of small numbers, and are *thought* of in the same way. We may see the five members of one hand; this repeated gives ten, this taken ten times gives a hundred, and this taken ten times gives a thousand. What we *see* to be true of small numbers, we *believe* to be true of the largest with equal certainty. This conviction is not without experience, but its strength and extent are not according to experience. The Intuitions of Number differ from the Beliefs, as the Intuitions of Space and Duration differ from the Beliefs.

CHAPTER II.

RELATION.

WE can perceive more than one object at the same time, though for clearness and completeness of view only one must be regarded; and so we can perceive some of the *relations* of objects as well as the objects. Relation is something that belongs to more than a *single* object; for it connects one with another. Many *relations* are known only by inference, but some are directly perceived. Objects may be perceived and not their relation; but the relation cannot be perceived alone, nor can it exist alone. We may see the line A and the line B and not their *equality*, but we cannot see this *relation* without seeing the lines. A larger intelligence may be requisite to the perception of the lines and their relation, but the same faculty of Intuition is sufficient. Some objects cannot be regarded together without a perception of their relation. Voluntary attention is necessary for comparison, but this does not change the power of Intuition. In all *comparison* some attention is given to the objects compared, and in many there are *thoughts* and *beliefs* as well as *intuitions*, but not in all. The objects compared may be *present* and their relation be *perceived*, and this is simply an Intuition. Such perceptions are Primary Judgments, to be distinguished from Beliefs or Convictions, which are Secondary Judgments, differing as the Primary and Secondary Perceptions do. The state of Mind discerning a relation is different from the relation, as the state of seeing is different from the object seen. Relations are not thoughts, but that

which may be perceived in our ideas, as in their objects. Relation is not a *mental form* given to outward objects, but some *fact* belonging to the objects related. The Mind *perceives* the relation, but does not *produce* it; for it existed before it was perceived.

1. Co-existence.

This is one of the most simple and important of the *relations* immediately perceived. Every thing perceived to exist is perceived to co-exist with ourselves. Some sensations co-exist with others, and with states of thought, belief, affection, and choice. A large portion of our knowledge of Nature, material and mental, common and scientific, is of the *co-existence* of substances, states, and properties. All sequences require the remembrance of what has been as well as the intuition of what is, and therefore *causation* of every kind can be known only by Memory and Reason. These are also requisite for the knowledge of most *co-existences*, but some are intuitional. Co-existences give many of the Qualities of objects.

2. Position.

An object may be perceived to be more or less near to another, to be on, or above, or below, on this side or that, within or without, moving to or from. The boundary of an object is its Form, and this may often be perceived in the *position* of points and lines, straight or curved. The Magnitude of objects is their relation to some portion of space, those being *equal* which may be put in the same space; those *greater* which require more, and those *smaller* which require less. In estimating *size* some unit is taken, which is contained a number of times in the objects compared. Only in small and simple examples can *position* be seen, and *form* and *magnitude* be directly compared. But from what is known *intuitively* in such cases, we advance with perfect certainty to *beliefs* respecting all distances and magnitudes.

As objects in Space and Duration are *included* in one

another or *excluded*, so there are other kinds of *inclusion* and *exclusion* in what is Mental. Many things are *included* in every state of consciousness. Many thoughts are comprehensive, and contain several elements. All convictions *include* conceptions, and some convictions *include* and *exclude* others. In Logic the Genus contains the Species, in respect to the *objects* named; while the Species contains the Genus, in respect to the *meaning* of the names. In such *inclusions* and *exclusions* there are both *intuitions* and *inferences*. What is first *perceived* of some little whole and part, is afterwards *believed* with certainty of every whole and part. Position, real or supposed, often gives the Quantity of objects.

3. Resemblance.

When two objects are compared, they are seen to be *like* or *unlike*; that is, they are distinguished more or less easily, by marks more or less evident. Objects are exactly *like*, when they can be distinguished only by differences in time and place. In such cases they are generally believed to be the *same*, to be only *one* object. Sameness is not the *fact* that they cannot be distinguished, but the *oneness* inferred from this. Sameness is often used for *similarity* without *oneness*, and this ambiguity has occasioned much confusion and error. Resemblance is in the objects compared, not in the mind; it is perceived or inferred, but not made by the observer. Likeness may be partial, or more or less complete, and in things of little or great importance. Few objects are so exactly like, that they can be distinguished only by differences of time and place. Because of various degrees of likeness objects receive one name, and are associated in one class. When two objects are present their resemblance may be *perceived*, but when only one is present the other must be represented in thought, and the resemblance of objects can then be only *inferred*. Most resemblances are known by a comparison of what is seen with

what is thought of. Attention may be given to one thing or another, and remembrances be more or less complete; and thus *likenesses* exist which are not noticed, and what is observed by one is unobserved by another. Much knowledge of the highest interest and importance is of *resemblances.* All Science is of this kind, and all general truths. The value of all particular knowledge is greatly increased by the comparisons which show how one scene, person, or event resembles another. Much of the pleasure and power of Poetry come from the metaphors and *similes* which associate near with distant objects, the visible with the invisible. Resemblances are to be found everywhere with differences, and in both the *intuitional* precede the *inferential.* Where the likeness is in the *relations* of objects it is an Analogy. Order is the resemblance of several things, which are like in their properties or relations. When three things are seen to be equal, Order is seen; and so if they are unequal with equal differences.

4. Subject and Object.

This relation is perceived with every exercise of intelligence. The Mind, which *knows*, is the subject to which all knowledge belongs, and that which is *known* is the *object.* As the Mind both knows and is known, it alone is both Subject and Object. Subsistences known are the *subjects* to which various properties belong; but in respect to knowledge, they are always *objects.* Nothing is perceived more clearly and certainly than the real and most important difference between the Self, the Mind that knows, and its object—the matter, space, duration, number, which are *known.* Equally clear and certain, real and important, is the difference between one Mind that has any knowledge, and every other mind. As all Souls are different Selfs, so must all knowledge be different *subjectively*, and no knowledge which one has can be more than *similar* to the knowledge possessed by another. But as the *objects* known

are one and the same, so must the knowledge be the same *objectively*. The same sun and moon, the same earth and sea, the same hills and trees, the same persons and actions, are known by many. Chiefly by knowledge Mind receives impressions from without, and exerts an influence, material and mental, of boundless variety and extent. Much knowledge respects the relations of objects to ourselves and to other objects, and of most, little is known but their relations.

INTUITIONS are the earliest exercises and effects of human Intelligence, and therefore the first states of Mind to be considered. Intuitive knowledge is primary and fundamental; for it supplies the elements of all other knowledge. Some supposed intuitions are not real intuitions, being in part remembrances and inferences, but these result from prior intuitions. More is known *intuitively* than is often supposed. Some real *intuitions* are frequently referred to as if they were merely *thoughts* and *beliefs*. Vain attempts have been made to prove that which is self-evident. All of which we are conscious has in itself the nearest, clearest, strongest, surest evidence. Some proposed proofs of the existence of matter and mind, substance, space, and duration, are unsatisfactory and inconclusive, because there can only be confirmations of what is self-evident. Nothing is known before the objects which appear in consciousness; and nothing is known with more clearness and certainty than much of which we are conscious. The evidence of Consciousness is the highest possible evidence, and they who reject one part always receive another. The rules already stated may be repeated, because of their great importance and frequent neglect. Nothing should be taken as contained in Consciousness that is not really there, and all that is there should be accepted as equally real and certain. We need not wish that we could perceive directly more than we can thus know. If we take all that can be thus known, the further knowledge we need will come to us as Thoughts and Beliefs, with the exercise of Memory and Reason.

PART II.

THOUGHTS OR REPRESENTATIONS.

Division I.

NATURE OF THOUGHT.

EXAMPLES AND EXTENT.

Division II.

CLASSES OF THOUGHTS OR IDEAS.

Division III.

NATURAL LAWS OF THOUGHT.

Division IV.

NECESSARY LAWS OF THOUGHT.

Part II.

THOUGHTS OR REPRESENTATIONS.

DIVISION I.

INTRODUCTORY.

Thoughts—Nature—Examples—Extent.

1. INTUITIONS are the beginning of all knowledge, but alone they would be of little value, being limited to the passing moment and to present consciousness. Without Thoughts there could be no knowledge of any distant object, no remembrance of the past, no anticipation of the future. Our first knowledge of all objects, the physical and metaphysical, is intuitive; and Intuition is the one Faculty which gives the knowledge of body and mind, space and duration, with the few numbers and relations which are discerned immediately by comparison. Of all these the Mind afterwards forms some *representation*, through which the *absent* object becomes in some respects as *present*, and knowledge is preserved. Conception is the name of the one Faculty through which such representations are formed in and by the Mind. Every thing that has been seen and felt, within or without, may be afterwards *thought* of; and much more. We can *think* of what is sensible and of what is spiritual; of the present and past and future; of what is universal, necessary, infinite; of the real and the imaginary; of the possible and the impossible. These representations

are often called Thoughts, or Conceptions, or Notions, or Ideas, though these names are also used sometimes for one kind of Thought and sometimes for more than Thought. They are commonly and conveniently used for *mental representations*, apart from any accompanying *belief*.*

2. The nature of a thought, or conception, or idea, can be known only by experience and reflection. Thoughts are evidently very different from Intuitions. Our *seeing* light and *thinking* of it, *feeling* warmth and *thinking* of it, *believing* and *thinking* of belief, *loving* and *thinking* of love, are states of Mind essentially different. Thoughts are of various kinds, but all have a common nature. We have *thoughts* of the persons seen and the words heard many months ago; and of places and events never seen; *thoughts* of emotions felt and purposes formed in early years; of youthful plans and expectations. We think of the departure of the Israelites from Egypt, of the siege of Troy, the foundation of Rome, the life and death of Socrates, the conquests of Alexander, the invasion of Britain, the pyramids and the Nile, the solar system and the fixed stars. None of these objects are really *present* to our minds, but all are in some

* According to Sir W. Hamilton, the term Idea has been generally thus used since the seventeenth century, when it was so employed by Descartes, Gassendi, and Locke. A few instances occur before. It was used in another sense by Plato and his followers. Many French and German, with some English writers, deviate from the common English usage in various ways. Most of the terms of Mental Science are used with several different significations. Thus *thinking* may be merely having a *thought*, or forming a *judgment*. So *notion* is generally used for a *thought* which does not represent a *visible* object, or for some *opinion*. The term *idea* is often preferred for thoughts of single visible objects, but it is also used for *generalizations* from many, or for a supposed *primary type*, or a general *principle*. Logically, a *concept* is a thought which refers to some classification, and is either the subject or predicate of a proposition.

way *represented.* What are these representations, these thoughts or ideas? and where are they?

3. Evidently Thoughts or Ideas do not share the nature of the objects represented. The thought of a blue sky is not blue, the thought of iron is not hard; the thoughts of pain and pleasure have not the nature of these sensations and emotions. The idea of duration is not long, that of space is not broad, nor is that of a man or a mountain in like manner extended, shaped, and coloured. Only of *material* objects can it be for a moment supposed that *ideas* are material *images*, shadows or reflexions of their objects; and this supposition is contrary to the evidence of consciousness. For other *ideas* the supposition is impossible. There can be no *material* images of *mental* affections; none of wisdom, kindness, rectitude. The bodily actions in which virtues sometimes appear may be *pictorially* represented, but nothing of *moral* character is thus shown. Pictures show some of the material qualities of the objects they represent, but Ideas do not; and pictures can only *suggest* what is mental and moral. Ideas belong only to the Mind, and are a mental product with no apparent material nature. The presence of objects is necessary to their *intuition*, and intuitions differ according to the nature of their objects; but one mental power is itself sufficient for thinking of any object, and the nature of a *thought* or *idea* is the same whatever its object may be. The thoughts of all substances and all attributes have the same mental nature, and come from the same capacity or faculty. Thoughts have their changes, laws, causes, and effects; and so have the *objects* of thought. But these are never identical; they sometimes agree and sometimes disagree.

Thoughts or Ideas exist only while we are conscious of them. Certain states of Mind and Body, of which we are not conscious, are requisite to the existence of any Thought,

and these precede its appearance, and may continue when it disappears; but these unconscious states are not *thoughts* or *ideas*. Ideas have no existence apart from consciousness, and thus differ from their *objects*, which are the same whether thought of or not. Objects exist before they are thought of, and they are thought of when they no longer exist. As the state of the nerve when there is no feeling is not a *sensation*, so the mental state when there is no consciousness is not an *idea*. Thought begins and ends with consciousness; and without it, whatever may be in Mind or Body, there can be no thinking or thought.*

4. Thoughts or Ideas may be defined as Mental *forms*, existing in consciousness, produced by the Mind, and *representing* what is not present in consciousness. They are said to *represent* objects, because for the preservation and increase of knowledge, for the continuance and excitement of mental feelings, they are in some degree what the objects themselves would be if they were present.† We can reason on

* That the present *ability* of thinking requires a certain condition of the Brain is evident, but this does not show that the whole mental action is determined by the *nerves*, or that *thoughts*, with beliefs and affections, are in the nervous system. An instrument may be required for some work, but the instrument does not decide what the work shall be. A pen may be necessary for writing, and the state of the pen will affect the shape of the letters; but the pen has nothing to do in determining what words shall be written. According to consciousness, it is not the Brain, but the Mind, that knows, thinks, remembers, reasons. Consciousness shows that the Mind is in the Body, but not that it is in the Brain. That our *thoughts* are *images*, or *impressions*, or *motions*, made in the white and grey matter of the Brain, is a conjecture without evidence or use, and contrary to all that is known of the nature of *thoughts* and the nature of *nerves*.

† As *thinking* is a mental *state*, some other term is requisite for *thought*, which is a *product* and may be an *object* of thinking. By thinking we *form* the *ideas* or *thoughts* of a square and circle; and these may be called mental *forms* rather than *states*. We can compare these mental *forms*, and reason upon them, as though they were real objects. The more attention is given to the *idea*, or to the *object*, the less is given to the *self* perceiving or thinking.

thoughts as we do on *things;* and the influence of objects when represented in thought is often greater than when they are present. All that most affects the happiness and welfare of human beings, their conduct and character, is not present, but absent; not seen, but thought of.

Ideas owe their chief value and use to their *representative* character. Apart from this they would be of no more worth than the visions of a dream or the delusions of madness. Everyone believes that *thoughts* do generally agree with the *objects* thought of, and that more completely than any other representations. Many mental representations are compared with their objects, and found to agree or disagree; and others are verified by a combination of evidences producing the strongest and surest convictions. Thus the beliefs of Memory are confirmed, and ideas are known to excel all other representations. Statues exhibit the solid form of a few objects, and pictures give the colours of others, showing one figure and suggesting another. But ideas have neither solidity, or colour, or shape, yet they represent *material* objects more perfectly than any statue or picture; and with equal clearness and completeness they represent *spiritual* objects. The representative use and value of *words* depends entirely on the *ideas*, which through association are suggested by what is seen or heard.

5. We can think of everything that has been felt and perceived in body and in mind, whether it still exists or not, and of countless other objects. The elements of thought given in consciousness may be indefinitely enlarged, differently arranged, and combined in an infinite variety of ways. Thus the mind receives and retains a knowledge of all the experiences of human life—of the records of history, the discoveries of science, the productions of genius and skill. All that can be known of the visible and invisible, the earthly and the heavenly—whatever of beauty and gran-

deur the world has produced, and something still more excellent—all this may be represented in our minds. Wherever we are, in light or in darkness, the Mind can form representations of these objects, however vast and distant, many and various. The *elements* of all come from the *intuitions* of which we were once conscious, and their endless combinations are a possession, immeasurably more precious and permanent than all outward riches.

6. The capacity for forming thoughts or ideas or conceptions is called Conception; and to it all such *representations* are referred when there is no belief of a corresponding reality, past or present or future. Conception and Ideation are general names for the Faculty of forming mental representations. The general names are less frequently used than the special names, which refer to some kinds of representation, as Abstraction, Generalization, Fancy, Imagination; and those which include Belief of some kind, as Memory, Judgment, Reason. Conception, or Ideation, like all other faculties, is strengthened by proper use; and its exercise is facilitated by the associations which aid all habitual actions. It is more easy to think on the subjects, and in the way, to which we are accustomed. The faculty is possessed by all, but all have not the same power of forming mental representations. Some have a special ability for representing mentally one class of objects—forms, sounds, numbers, there being a peculiar natural aptitude increased by practice. The exercise of the faculty is impaired by disease, cold, and weariness. It is often without effort or regulation, but it is most beneficial when chosen and controlled.

DIVISION II.

CLASSES OF IDEAS OR THOUGHTS.

THOUGHTS or Ideas have been classified in various ways.

I. According to their *elements*, they are Simple and Composite.

II. According to their *sources*, they are from Sensation and Reflection.

III. According to their *objects*, they are (1) Concrete and Abstract, (2) Singular and Common, (3) Relative and Non-relative, (4) Positive and Negative.

IV. According to their *relation* to objects, they are (1) True and False, (2) Adequate and Inadequate, (3) Distinct and Confused.

These various classes of Ideas refer to what is most important in their nature, origin, and use. This will appear if we consider some examples of every kind.

CHAPTER I.

ELEMENTS OF THOUGHT.

I. SIMPLE Thoughts or Ideas are those in which there are no parts which can be held separately. Like the elements of material nature, they are comparatively few, and all others result from their combination. The thoughts of mere existence, of the smallest perceptible portion of body, space, and duration, are *simple* ideas; and so is the thought of the indivisible *self*, of which everyone is conscious. The thoughts of many single states of mind and body are also *simple;* as the ideas of pleasure and pain, of colour and sound. Every *simple* idea must result from a previous *intuition*, and therefore has, or had, some *real* object corresponding to it. We could never think of pleasure and pain, colour and sound, if they had not been experienced. We could never think of space and duration, of body and mind, if we had not some prior perception of these objects. Some simple ideas may be less than others. Existence, state, sensation, colour, red, scarlet, are all simple ideas, for no two parts can be held separately; but each in the series contains that which precedes and something more. We can think of *existence* without thinking of *sensation*, but not of *sensation* without thinking of *existence;* and we have the thought of *colour* without that of *scarlet*, but not the thought of *scarlet* without that of *colour*.

II. COMPOSITE Thoughts or Ideas are those of which parts may be held separately. These like material compounds are

countless in number and variety. Some consist of similar parts, others of dissimilar. Larger portions of *space* and *duration* are merely multiplications of smaller *similar* parts, and so it is with our ideas of these objects. The idea of a *plant* or an *animal* has many *dissimilar* parts, as their objects have. So the ideas of wood, iron, gold, man, society, government, rebellion, wisdom, virtue, are composite. Composite ideas may, or may not, have corresponding objects. There must have been a prior intuition of their *elements*, but no prior experience of a similar *combination* is necessary. It is as easy to think of a green man as of a white, of a winged horse as of one without wings, of a perfect circle as of an imperfect. No language can give any new *simple* ideas, but new *composite* ideas are readily communicated. Having the elements of thought, we can combine them as others have done, or in new ways.

Composite thoughts, especially those which do not refer to single objects, vary much; and their elements must be regarded, that they may be fully known and properly distinguished. Hence the need of Analysis, the separation in fact or thought of the parts of that which is composite. Analysis may be *real*, as when the objects are separated; or *mental*, when one part is represented alone, and then another; or *logical*, when without separation one alone is regarded and referred to. The analysis of complex abstract notions is of the greatest importance for all correct thinking. Without it confusion of thoughts and names is scarcely to be avoided.

Simple *ideas*, or their *names*, are defined by reference to their objects; Composite by the mention of their elements. The object of Verbal definition is to give the whole meaning of the term; that of Real is to show its place in a system of classification.

CHAPTER II.

SOURCES OF IDEAS.

THE two sources of all thoughts are described as Sensation and Reflection, or the outer and inner Consciousness—Intuitions of Body and of Mind. Both of these are given by Experience.

1. Sensation.

Of the first class are ideas of extension, figure, solidity, motion, colour, sound, taste, scent, hardness, heaviness, and so on. These *thoughts* all come from *sensations*, and for them some state of the nerves, and the perceptive power of the Mind, were equally needed. We could not have any ideas of this kind if we had not bodies, and the experience of sensations in them. The capacity for *sensations* may be lost, and the *ideas* still exist in the mind. Colour may be thought of when it can no longer be seen; but it could not be thought of unless it had been once seen. With fewer senses we should have fewer ideas of this kind; with more sensations there would be other ideas. Where the sensations agree or differ, so must the thoughts. As the perception of *space* accompanies that of *body*, so the simple *idea* of space is from some *sensation*. Ideas of sensations are properly placed first, because they belong to our earliest experience; but even then they are not alone, and they require, besides the experience of sensations and the power of perception, another power of Mind, that of Conception. Our first ideas may be from Sensation, but others are with

these from the beginning, and in after life these ideas are far less in number and importance than those of another kind and origin.

2. Reflection.

This is the name given to the second source of Ideas. Not at all by looking without, but entirely by looking within, do we find the objects to which our highest thoughts refer, and from which they come. Remembering, reasoning, regretting, rejoicing, resolving, reproving, are states of consciousness quite different from every kind of sensation. Nothing in any sensation of the Body could supply the thoughts we have of the actions and affections of the Soul. Doubting, believing, hoping, fearing, loving, hating—all that belongs to the character of men, and all that most concerns their condition—are entirely beyond the range of any of the senses. States of Body precede and accompany states of Mind; but they are utterly dissimilar. Nothing can be more contrary to what we feel and see than the statement, that whatever is found within us is merely the shadow or impression or copy of what has been found without us—that all ideas are from sensation.* Thoughts which come

* This opinion has been attributed to Locke, chiefly because he has been thus misrepresented by French writers. It is in direct opposition to his teaching; for he expressly gives the same place and importance to Reflection as to Sensation. His statements respecting *power, causation, space, duration, infinity, and conscience* plainly show the difference. The ideas which some have attributed to a third source—Reason—are all, according to Locke, ideas of Reflection. He compares the Mind at first to a piece of white paper, on which nothing is written. But this does not attribute all knowledge to outward objects. The material and texture of the paper will affect the marks made, and be known through them, as well as the motions of the pen and the nature of the ink. As the marks depend on the nature of both paper and pen, so all knowledge must depend on the nature of that which knows and that which is known; and as more is known of paper than the impressions made upon it, so much more is known of Mind than correspondencies to outward objects.

from *without* respect what is material and animal; those which come from *within* are spiritual and human, and from these only can we rise to what is Divine.

Many *composite* ideas, as well as *simple*, may be easily traced back to *realities* once perceived; but others differ, and in various ways surpass them. We think of *perfect* objects—a perfect watch, horse, man. The good found in several is combined in one, or that which is occasional is thought of as constant, or that which is partial as complete. The ideas of *perfection* vary much with individual experience, and generally refer to human wants and wishes. They all come from experience, and require no other source. The *perfect* ideas of geometry—the right line, square, circle—may never have been *really* seen; but objects *apparently* such are often seen, and are easily thought of. The *definitions* are more simple than any more accurate description of material objects, and are merely modifications of these applied to space. The ideas do not come from *abstraction* only, but what is first thus gained is altered in various ways. Geometrical lines and figures are *exactly*, what other lines and figures are *apparently* or *nearly*—they are the best representatives of all similar lines and figures, and from them we can reason deductively, and obtain an indefinite number of universal propositions, certainly true, and of the greatest use. These ideas are of high interest and importance, but they require no peculiar origin.

The Infinite can never be fully perceived in any present reality, nor can it be fully represented to our minds in any thought. But *infinity* is easily thought of, though it cannot be perceived. Limits are both seen and thought of, and the Idea of *infinity* is merely the *negative* of all limits. If we can think of any body or mind as existing, we can also think of it as not existing; if we can think of limits as present, we can also think of them as absent. If *infinity* could not be thought of, it could neither be affirmed or

denied. We can think of and see partially that which is indefinitely *more* than we can fully see or think of; and by knowing that to which *infinity* belongs we know that which is Infinite.

Ideas of every kind may be traced back to Sensation and Reflection. They are according to experience, and therefore no other source is to be supposed. Some are from *Sensation* only, some from *Reflection* only, and others from both. As our present state of existence suffices to account for all our ideas, there is no reason for regarding any as *remembrances*, the signs of a prior state of being. Ideas of many outward objects do not represent them alone, but with the sensations they produce, and also with convictions and sentiments that have become connected in subsequent experience with what was primarily known. Thus the ideas of Force, Cause, Beauty, Necessity are, in part or wholly, ideas of Reflection. In the sense now used there can be no Innate Ideas; but there is a constitution of Mind, which determines the formation of both *thought* and *belief* when the proper object is presented. This is like the constitution of the senses, which precedes all sensation.

CHAPTER III.

OBJECTS OF THOUGHT.

ACCORDING to their *objects*, thoughts differ as names do, and several classes of Ideas correspond to classes of Nouns. The connection of Thought and Language is of great importance, *words* being of much use in thinking, though not indispensable. Some objects are known and thought of before their names, and some after. Language is useful both for the preservation of thought, and for its communication. Clearness, steadfastness, and readiness of thought are promoted by the right use of language, and sometimes cannot be secured without this aid; but words often mislead by their ambiguity and through their associations. Words have been styled the *wheels* of Thought, which moves more easily and quickly with them, but not always in the right way. Words do not stand for *ideas* alone, but for *objects* as thought of; for to these the *names* are given and the *propositions* refer. The *sun* is not the name of an *idea*, but of a *real* object; and the *sun shines* is a statement respecting this object. In the common use of words we seldom have complete ideas of their full meaning; this is impossible. It is sufficient for correct thinking that some part of their meaning should be perceived, and that the whole *could* be recalled. This is sometimes styled the *symbolical* use of words, and it is the way in which many are usually employed. Thinking and speaking would be slow indeed, if it were requisite that the whole meaning of all

words should be fully before the mind whenever they are used. But *words* will not be rightly used, if their *meaning* cannot be fully given when wanted.

Concrete and Abstract.

I. (1) CONCRETE.—Ideas are thus named which represent a substance, or subsistence, with its attributes; the *subject* being that to which *qualities* and *relations* belong, and which remains when they change. The *ideas* of a stone, a tree, a man, a spirit, are *concrete*, and so are the *names*.

(2) ABSTRACT.—These ideas generally refer to *attributes*, which do not exist alone, but belong to some subject. The *ideas* of length, breadth, hardness, growth, humanity, virtue, liberty, fame, are *abstract;* and so are the names. Because such abstractions can never *exist* alone, it has been questioned whether they can be *thought* of alone; but it is evident that they are thought of without any of the subjects with which they have been perceived. If we have seen *white* paper, *white* silk, *white* snow, *white* foam, the *quality* which has been seen many times will be thought of, when the particular subjects less frequently seen are forgotten. So when *equal* lines, *equal* figures, *equal* weights, *equal* measures, have been regarded, the *relation* in which they all agree will be thought of *separately*. In like manner *beauty* and *goodness* are *abstractions* from all particular *objects* seen or thought of. Attributes must be thought of as belonging to some *subject*, or they would not be *attributes;* but the *abstract* idea does not include any particular subject.

Concrete objects are thought of before abstract, and many abstract *nouns* are formed from concrete *nouns* and *adjectives*. Gold gives rise to golden, wood to wooden, earth to earthy, stone to stony, spirit to spiritual, self to selfish, friend to friendship. So redness comes from red, whiteness from white, equality from equal, wisdom from wise. The pro-

positions—the rose is red, the man is wise—may be understood as meaning, the rose *has* redness, the man *has* wisdom; or the rose belongs to the *class* of red things, and the man to the *class* of wise persons. Some propositions are more naturally interpreted in one way and some in another.* The abstract ideas of *number* and *magnitude* belong to Arithmetic and Geometry, those of *space* and *duration* to Metaphysics. These are the Abstract Sciences; but though Space and Duration are *abstractions*, they are not *attributes*; for they do not begin and end, as attributes do, with their subjects. Abstract ideas have as much *reality* as concrete. The *form* of a stone is as real as the *substance*. All *ideas* are formed by the mind, but their *objects* are not.

Singular and Common.

II. (1) SINGULAR.—These ideas refer to a single object, and agree with proper names. Moses, Sinai, Etna, England, Thames, Tiber, are singular ideas, though the objects represented are composite. Some unity belongs to the objects, the names and the ideas.

(2) COMMON.—These ideas are applicable to any one of a class, or to the whole class; but when they refer to the whole they are distinguished as General. Man, mountain, country, river, are examples of common ideas. Many

* Adjectives, if understood to mean the *class* to which an attribute belongs, are *concrete;* if they mean the *attribute* alone, they are *abstract*. When the predicate of a proposition is a *verb*—as he sees, or runs, or thinks—the meaning must be an abstraction. Many abstract *nouns* are formed from *verbs* with an active or a passive sense, as *flight* from flee, *weight* from weigh, *hatred* from hate; while some, as *fear* and *love*, are both verbs and nouns. When *adjectives* are simply added to nouns, they are *attributes*, as a *tall* man; when affirmed or denied of a subject, they are *predicates*, as the man is *tall*. In both cases the sense is generally *abstract*. Adjectives are sometimes used alone, the accompanying *noun* being understood, as the good and the bad, the great and the small.

words are used sometimes as *common* for any *one*, and sometimes as *general* for *all;* and there is the same difference with *ideas.* Man, lion, cedar, oak, rose and violet, are names and ideas of single objects or of single classes. There is the same twofold application of *words* and *ideas* when the *objects* are Indefinite. Air, water, wine, wheat, clay, salt, silver and gold, do not refer to a *definite* portion of these objects, but to *any* portion and to *all.* The *plurals* of these nouns denote *many* kinds, and some nouns are used both definitely and indefinitely. Collective ideas and nouns refer to *collections* of objects, and may be singular, as Europe, Asia, there being only one combination of several countries; or common, where there are many similar combinations, as family, nation, city, forest, fleet, and army.

General Ideas have been the subject of much discussion, and their possibility has been denied. But, as in so many controversies, the chief difference is verbal, the words *idea* and *same* being used with different senses. Singular ideas can represent their objects only partially; for there is more in every object than is perceived, and more is perceived than is remembered or thought of. General ideas are less complete than singular, because they contain only that which is common to the class. Leave out of the idea of any single man what is peculiar to him, and there is the Common idea of man, which becomes General by the addition of an indefinite number of objects agreeing in their common properties, and Universal by the negation of any limit to the number. So leave out of the idea of any circular object all that belongs only to it, and there is the *common* idea of a circle, from which the *general* idea follows, and the *universal.* All common ideas of mind and body, of their states and actions, are formed in the same way; and the General Idea is the Common with an indefinite number. It has been argued that the general idea of a triangle must be impossible, because triangles are either

right-angled, obtuse, or acute; either equilateral, isosceles, or scalene; and no idea can contain all these. If the idea of any triangle is complete, it must have only some of these inconsistent properties; but it need not be completed, though this is often desirable for clearness and steadiness of thought. Every object has many properties by which it is distinguished from others partially like, but the peculiarities may be overlooked or forgotten. In the General Idea of a triangle we think only of a figure with three sides and three angles, and think no more of their particular relations than of the position and magnitude of the whole figure. And so with all General Ideas. An object may be seen to be a *tree* when the *species* cannot be seen; and if the *generic* character is discerned alone, it may surely be thought of alone.*

Ideas, whether simple or composite, concrete or abstract, are called Concepts, when they are so defined that their *contents* are exactly known, and their *application* determined; what is contained in them being called the *comprehension* of the Concept, and the objects to which it is applicable, the

* The controversy of the Realists and Nominalists was once esteemed of the highest importance. The former maintained that General Ideas had some single Real object, while the latter asserted that nothing was General but the Name. The Realists argued that the truths of Mathematics did not begin to be with the objects numbered and measured, but belonged to what is eternal and unchangeable. All *necessary truths* are equally true for past, present, and future; but this does not involve the eternal existence of their *objects*. That *right* is always better than *wrong*, does not prove that both good and evil are eternal. The Idea, or Form, existing in the Divine Mind, that existing in Nature, and that existing in human intelligence, were said to be the same Idea. But this *sameness* is not *oneness*, identity; it is only *likeness*, similarity. The Forms which are in many minds, in natural objects, and in the Eternal Mind, must be many Forms, however like they may be. Some *forms* and some *collections* have *reality*, but not all. The General Idea cannot be a single Reality. But more is general than the Name. If general terms had no meaning, they could be of no use. Their meaning is the general Idea, which is a partial and incomplete representation of the class of objects to which the general name is applied.

extension. General Ideas are said to have *extension* according to the number of objects contained in the *class*, and *comprehension* according to the characteristics of the class. Common terms, or class names, are said to have a *denotation*, which corresponds to the *extension* of the idea, and a *connotation* which agrees with the *comprehension.* All men form the *extension* of the idea Man, and the *denotation* of the term; while the qualities of humanity are the *comprehension* of the idea, and the *connotation* of the term. It is evident that these two vary inversely—as the one increases the other decreases. Thus the extension and denotation of *animal* are larger than those of *man*, while the comprehension and connotation of *man* are larger than those of *animal;* and in both the greater contains the less. Large classes include smaller, and these others smaller still. The class of animals includes birds, and that of birds contains eagles. In Logic every larger class is a Genus, in relation to the smaller, which is called a Species; but in Natural History the term Species is restricted to the plants and animals which may be supposed to have the same stock or parentage, having such agreements and differences as are found in those which are known to have a common origin. The first classifications are formed according to the more obvious resemblances and differences; but scientific classification regards those which are most important. There are classes in Nature as well as in the minds of men, and the latter should agree with the former. As the classes made vary, so will the names by which they are represented, and the ideas derived from them. General ideas have as much *reality* as singular. The *common* nature is as real as the *peculiar*, and the *collection* as real as any *one* object.

Relative and Non-relative.

III. (1) RELATIVE.—Ideas are relative when, besides representing a principal object, they refer to another con-

nected with it, *relations* being the facts whereby two or more objects are united. A foundation, a root, a head, a governor, are relative ideas. A relation may be thought of in connection with either of two objects, the principal and the subordinate changing places; and such ideas and their names are called *correlatives*. Husband and wife, master and servant, debtor and creditor, the top and the bottom, the outside and the inside, the greater and the less, whole and part, cause and effect, are correlative terms and ideas. The thoughts and names of *relations* are to be distinguished from *relative* thoughts and names, the former being always *abstract*, and the latter generally *concrete*.

(2) NON-RELATIVE.—All ideas are of this description which represent objects by themselves. Stone, tree, man, horse are non-relative, because there is in them no reference to another object, though the various parts are regarded in relation to one another, and the whole has many relations to other objects.

Positive and Negative.

IV. (1) POSITIVE.—Ideas and names are *positive* when they represent any object as present or existing. Intelligence, kindness, order, animal, vegetable, mineral, human, spiritual, are of this kind.

(2) NEGATIVE.—Ideas and names are *negative* when they refer to any thing as *not* existing or as absent. Unintelligent, immaterial, immortal, unkind, infinite, insensible, disorder, are of this description. When the object thus referred to is usually present, according to its common nature, the *negative* idea is said to be *privative*. Thus deafness and dumbness in connection with human beings are *privative*. Some terms are positive in *form* but negative in *sense*, as empty, idle, stupid, silent, opaque, dry; while others are negative in *form* and positive in sense, as unhappy, disagreeable, and worthless, when applied to persons.

CHAPTER IV.

RELATIONS OF IDEAS TO OBJECTS.

IDEAS have various relations to their objects, and are described accordingly. All represent some object—that which is, or has been, or will be, or is supposed to be; or the contrary to these.

I. Ideas are said to be True, when they agree with the objects they are supposed to represent. In the same manner a picture is said to be true. Ideas are Untrue, when there is no such agreement. Strictly speaking, only *propositions* are true or untrue, and ideas and pictures are so described, with a reference to the statement implied and understood, that they are proper representations of some objects.

That some Ideas are *true*, and represent real objects, is known by Memory, which gives not only *representations* of objects, but some knowledge or *belief* of their agreement with the objects represented. The agreement of other Ideas with objects is known by Reason, which gives the belief of this correspondence. When the continuance of any object is known, the Ideas may be compared with these objects, and seen to agree or disagree; and what is inferred in one way, is confirmed or corrected by what is inferred in another way. The reality, which is first known to belong to the Ideas from which we reason, is extended to

the conclusion, with equal certainty if the reasoning be certain.*

II. Ideas are said to be Adequate when this agreement, if not entire, is all that is intended, or supposed, or requisite. In all natural objects, and in most that are artificial, much more exists than is known. The idea is less than the object; but it is said to be adequate, if sufficient for the ends purposed, and sometimes if sufficient for distinguishing that object from others. Ideas are Inadequate, though true so far as they go, if wanting in this completeness.

III. Ideas are said to be Distinct or Confused, generally with a reference to Language and the proper use of words. Like visible objects, Ideas are *clear* or *obscure*, as they are more or less easily distinguishable from others. They are said to be Distinct, when they are properly distinguished in their use. A picture is said to be *distinct*, when thereby the object it represents can be easily known. Ideas are supposed to represent objects, and to agree with the ideas commonly associated with words; but if their elements and arrangement do not correspond to the nature of objects and the proper use of words, they are sure to be often misapplied. The same words will be used when different words should be employed, and different words when the same would be proper. There is thus a confusion of words, which shows a confusion of thought, and the absence of distinct ideas.

The proper use of words cannot be known from a partial

* When different *names* are given to the same object, this is not merely because such is the usage of language, but because what is expressed by the one is believed to be really connected with what is expressed by the other. And so it is with the subject and predicate of propositions. Propositions, unless merely *verbal*, declare what is believed respecting real objects, and not merely what respects our ideas.

knowledge of their application; for their meaning often changes. The names first given to a few objects are afterwards given to others in some degree like. Then the names are extended to other objects like them, but with less likeness to the first. After a few such extensions the same name will be given to a variety of objects, having little, it may be nothing, in common but the name. The change in the objects to which words are applied must cause a corresponding change in the signification of the words; but these changes being gradual, and hardly perceptible in their successive stages, are often overlooked when small, and disregarded when they have become great. It is therefore needful to examine the signification of words, to analyse the complex ideas which make their proper meaning: thus only can there be the distinctness of thought, which is requisite for correct knowledge and conduct.

From a consideration of Ideas of every kind it appears that, whatever may be their elements, sources, objects, and relations, all have the same nature. They are mental representations of objects, and have their peculiar character from the Mind by which they are formed, and in which they are. They sometimes come without choice, and sometimes because of choice; and so thoughts may be said to be *voluntary* or *involuntary;* but there is no difference in the thoughts, their nature, qualities, and uses being the same, whether they are in any way chosen, or are entirely without choice.

We are conscious of *representations*, as we are of *presentations*. Both may be partially known without *attention*, more clearly and fully with. Intuitions may be compared one with another, and seen to agree or to differ; and so may Ideas. When Ideas are true, much may be known of *objects* by the consideration of *ideas*. Some things may be seen in *pictures*, and inferred respecting them, which cannot be seen in, or inferred respecting, the objects represented; and so it is with *ideas* and their objects. But much that is

seen in pictures and inferred, is also to be seen in the objects represented, and may be inferred of them; and so it is with *ideas*, mental representations. As *sensations* belong to each individual, and others can have only those which are *similar*, so it is with *ideas*. One object is known through the similar sensations it produces in many persons, and so one object is represented by the similar ideas of many. But the *ideas* of two persons can never be one and the same *idea*, any more than the sensations of two persons can be one and the same sensation.

DIVISION III.

NATURAL LAWS OF THOUGHT.

NATURAL LAWS, as *real facts*, are the constant connections of natural objects existing together, or following one another. As *verbal expressions*, they are general statements of such facts. These Laws are different from the Laws of any society or people, describing what actually is, and not what is commanded; and in this they are like the Laws of number and magnitude. In the primary use of the term, Law is the declaration of some authority respecting voluntary conduct, and it states what is required; but in its secondary use, Law has no reference to command or obedience. The Laws of a country may indicate the usual conduct of the people, though there are always exceptions; but the Laws of Nature are true universally, and would not be Laws if they were not. Men have to learn and obey these Laws, and their welfare and success depend on knowledge and obedience. But in Nature there appears the most exact regularity, everywhere and always. Figuratively, natural objects are said to obey laws; but where there is no choice or consciousness in the object, there can be neither obedience or disobedience. The discovery of Natural Laws is the chief aim of Science; and they are of the greatest importance, since all our safety and comfort, all our use and control of natural objects, depend on our acting according to the Laws of Nature. But Laws produce nothing, and have in

no respect the nature of Causes. Natural changes of every kind must be attributed to Forces or Powers, and Laws are the way in which Forces or Powers act.

All objects ever seen or felt or known might be *thought* of, but they are not; for we have Ideas of some and not of others, and this is according to certain Laws. The series of Ideas continually passing in our minds, however varied, is never without order; but *what* we think, and *when*, are according to natural Laws; and the government of thoughts must always be according to these Laws. As almost everything in human life depends on Thoughts, which are in some degree subject to our control, it is evidently of great importance that the Laws of Thought should be rightly known and used. The *necessary* Laws will be subsequently considered, at present we notice only the Natural. These are of two classes, the Prior, which respect the *presentation* to the mind of what is afterwards thought of; and the Later, which respect the *production* or *reproduction* of Thought. They may be styled the Laws of Impression, and the Laws of Association or Suggestion. The Natural Laws of Thought are gained by a large experience of simply actual connection; the Necessary Laws by a small experience of what appears to be necessary.

CHAPTER I.

PRIOR LAWS OF IMPRESSION.

WHATEVER has been seen or heard, felt or done, seems to leave on the mind some *impression*, on account of which it may be afterwards *thought* of. In the next minute or moment it can be recalled clearly and completely, or the thought may come without any wish. But it is not so after several hours, days, months, years. Some past experiences are often thought of, others rarely or never; some are recalled easily and quickly, others require effort and favourable conditions.

I. Strong sensations and emotions are more often and easily thought of than the feeble; and clear perceptions recur more readily than those which are obscure. That which gives much pleasure or pain, which excites any strong emotion or affection, is easily remembered, and comes to the mind unsought for. We can scarcely help thinking of the objects and occasions of much delight or distress, of the persons much loved or hated. The effect produced on the mind by every presentation resembles in some respects that which weight produces on material substance, when one body lies on another. As the weight is heavy and the outline clear, so the impression is perceptible and permanent. It is not to be supposed that any impression is made on the Mind or the Brain, like the impression of a footstep on the ground, or of a seal on wax. The thoughts of material objects are not material, and no conceivable change in any

nervous substance can be like any mental affection or action. That some effects are produced in the Mind, on account of which thoughts are subsequently formed, is quite certain; but these effects are beyond consciousness, and cannot be known or even conjectured. Common experience shows us that what has much affected the mind, whether through the senses or in any other way, is more likely to be thought of than other objects. This is the first law.

II. The continued or repeated presentation of objects conduces to the subsequent formation of thought. What is seen or felt for some considerable time is more readily thought of, than what is seen or felt only for a moment; and so it is with repeated experiences. The momentary view of a person passing in the street, or of a building seen from a carriage moving rapidly, can hardly be reproduced in thought, while this is easy after long observation.

Lessons are learnt by repetition, and what is soon forgotten after a single perusal, may, by reading again and again, be fixed in the mind for many years. To this mental experience there are material analogies. The continued or repeated pressure of one body on another will deepen the impression, the effect increasing with the cause. Continuance has the nature of *repetition* in successive moments, and may be taken as the same. That repeated experiences are more readily thought of is a second law.*

* It is certain that many things are noticed at the time, and make some impression on the mind, which cannot be recalled after only a few minutes. In reading hastily half a page every word is seen and partially understood, but when the meaning of the whole is remembered, very often single words cannot be recalled. So in adding up a column of figures each will be observed, and the sum will be correctly gained, though the separate numbers are forgotten. There must have been a *consciousness* of all the words and numbers at the time, but the impression left is so slight that it quickly passes away. It would be remembered, if there were a pause at any word or number to increase the impression.

III. What is regarded with attention will be remembered, while what is not so regarded is forgotten. There will be thoughts of the former when there can be none of the latter.

Attention may be *voluntary* or *involuntary.* Sometimes in seeing or thinking we seem to lay hold of objects, regarding them because we choose and strive to do so; but at other times objects seem to lay hold of us, and we cannot help regarding them. Voluntary attention is an exercise of will. It is not a simple intellectual state in which the mind may be only *passive*, but a different condition, in which it is consciously *active.* The nature and importance of this power will be subsequently considered, and it is noticed now merely as one of the causes of Thought. If when several objects are seen or thought of, one is specially and earnestly regarded, it will be more clearly and completely known; and it will also be more surely and correctly remembered. What is seen or heard once with attention will be remembered, when what has been seen or heard twenty times without attention will be forgotten. The attention given to an object is like the pressure of the hand on a seal, which causes a better and more lasting impression. That what we *attend* to is more readily thought of, is the third law. *

IV. Any excitement of feeling *accompanying* the presentation of an object favours its representation. Not only are the *objects* which excite feeling more readily thought of than others, but it is so in some degree with their *accompaniments*, when no attention has been given to them. The place

* Distinctness implies a reference to some *class* of objects, and therefore involves both *repetition* and *attention.* This will fully account for the greater facility with which all objects are thought of, which have been *distinctly* seen or thought of. It agrees also with the general law that what is *perceived* is more readily thought of than what is *felt.*

where something very delightful or distressing happened, the furniture of the room and the persons present, are more easily and distinctly remembered, because of the mental excitement with which they were connected. This is a fourth law, and may be compared to the heating and softening of wax, which then, without any increase of pressure, receives a better impression.

These different causes have their influence separately, and they are often combined. Attention may or may not lead to *repetition*, it may or may not produce *feeling*. Feeling often occasions *attention*, and this increases *feeling*. The continuance and effectiveness of voluntary attention depends much on the aid received from the excitement of some feeling. It is therefore of so much importance that an interest should be awakened in the subject of consideration. Then the attention becomes easy, sometimes involuntary, which otherwise would be difficult or impossible.

The same laws of Impression which regulate the first production of Thought apply to its *reproduction*. As Ideas are vivid and repeated, regarded with attention and feeling, so they come again with more clearness and completeness, facility and correctness. These laws are not without a *reason*, but there is nothing in any Intuition, from which the subsequent Thought could be known, apart from the experience of *thinking;* nor is there anything in any Thought from which, apart from experience, its recurrence could be anticipated. These laws of Thought are natural and reasonable, but they are not necessary.

CHAPTER II.

LATER LAWS—SUGGESTION.

WHAT has been seen or heard, felt or done, in the past may be afterwards thought of; but it is not thought of without something present to lead to thinking of these objects. And in like manner Ideas which have been previously formed in the Mind do not return without some present cause. Our thoughts come and go in quick succession, and their number, variety, and rapidity cannot be expressed. There often appears at first no connection or order, but a closer examination shows in most cases a regularity which is according to some Law.

I. The first is that of Similarity.

Many thoughts are occasioned by the *likeness* of something present to what belongs to a former experience. The flower we see, the tree, the building, the hill, the stream, the person, the picture, lead us to think of some *similar* objects. So the sounds we hear, the pleasures and pains we feel, suggest the thought of some similar previous experience. A large portion of our thoughts may be thus accounted for. As seeing one object *suggests* a similar, so the *thought* of one suggests the *thought* of another like it, and this suggests another, and so on; till, though each idea is like the next in the series, there may be no similarity between the last and the first. A passage in one book leads to thoughts of similar passages in other books: an example of courage or

kindness suggests similar examples. The *similarities* by which objects are associated are of various kinds, some trivial and others important, some amusing and others instructive, some elevating and others degrading. Individuals differ much in the measure in which their course of thought is determined by Similarity, and in the kind of similarities which are habitual to them. This may be partly attributed to constitutional differences, but it is owing chiefly to voluntary customs, the connections of thought which are chosen and preferred. All general knowledge, the common lessons of experience, and the generalizations of Science, depend on this principle; and so do the similes and metaphors of Poetry.

Besides the likeness of parts and properties, by which objects of the same nature are associated, there is the likeness of relations, which may belong to objects of a different kind; and these too are suggestive one of the other. All the analogies of matter and mind are of this order. The oak and the honeysuckle, the bramble and the vine, may suggest the correspondences found in human life. The sunshine and the storm, the seasons of the year, day and night, have their counterparts in that which belongs only to the Mind. In numberless ways, interesting and instructive, the sensible suggests the spiritual.

II. The second Law is that of Contiguity.

Many thoughts are occasioned by the previous connection of present objects or ideas with others. There may be a *local* or a *temporal* contiguity. When we are in any place we naturally think of what was seen or heard, felt or done there, at some former time; and the thought of what was seen or heard in any particular hour or day will lead to thoughts of other things seen and heard at the same time. Thoughts have the same suggestive power as present objects, and the greater number of ideas that follow one another do so

because they have done so before. In remembering a discourse or a song, the first part brings after it the second, and this the third, and so on, when it would be impossible for us to recall them in any other way. Words suggest thoughts and thoughts words, not because of any similarity, but simply because they have been often associated. So colours suggest distances, positions, and magnitudes; sounds suggest distances, directions, and objects; and various *sensations* are so blended with *thoughts* coming from a previous experience, that they seem to form a single present *perception*. The various qualities that belong to one object, the several sayings and doings of one person, the different parts of a plant or animal, a machine or house, the different products of a town or country, are thus naturally associated; so that the sight, or thought, of one will occasion the thought of many others. This principle is of the greatest importance for the completeness of our knowledge of single objects, for the formation of *secondary* perceptions, and for the uses of language. Both these principles supply the materials of History and Science: they are employed in all the intercourse of society, in all the business and amusements of life. Much that is brought to our minds by suggestions of Contiguity is of no permanent interest or value. The prevalence of accidental associations, without any plan or purpose, indicates a mind without proper discipline and culture. The talk of uneducated people is marked by the mention of things, for no other reason than their connection with the same place, or time, or person.

Most of the ideas which arise in our minds may be easily referred to the principles of Resemblance and Contiguity. Suggestions by Similarity are according to the *degree* of likeness, and those of Contiguity are according to the *frequency* of the connection. These are combined in every possible way in the experience of every hour. We see a person, and think of some one like him; or we meet a friend, and think

of what he said when we last met. We hear a line of poetry, and then think of the following lines, or of some similar thoughts and verses, or of the persons with whom they were read, and of what was then said and done. The first sight of the Monument would cause most persons to think of the great fire of London. Some would then think of the plague, others of the political changes of the time. Thoughts would follow of other monuments, fires, plagues, revolutions; and so, starting from the column on Fish Street Hill, the mind would wander through the history of past ages, over various countries, to many things respecting society, science, or religion, according to the information, tastes, and habits of the individual. At different times the same object will lead to different courses of thought, each idea being, as it were, linked to the preceding by some connecting similarity or contiguity, which may be discerned by a little reflection. It is generally so, but not always. Other causes of thought are frequently found in combination with these, and sometimes separately.

III. States of Mind, both conscious and unconscious, have some suggestive power, besides that of the *objects* seen or thought of. Ideas come more readily and abundantly, when in accordance with present feelings or those recently experienced. Pleasant thoughts come naturally when we are cheerful, and gloomy thoughts when we are sad. Love, trust and reverence, suggest thoughts of one kind; anger, envy and jealousy, thoughts of another kind. Thus every passion or affection, without any effort or choice, obtains food for its continuance and increase. Those who are slow of thought and speech often become eloquent when their feelings are much excited. Similarity and Contiguity, in objects and ideas, may account for many of the thoughts that rush into our minds, but they do not account for their abundance and the sameness of character. Sometimes

ideas will come which have not the least likeness to, or any previous connection with, anything of which we are conscious. When giving all possible attention to some subject, scene, or discourse; when studying the properties of lines, angles, or numbers, thoughts of a totally different kind, and with no perceptible relation, will suddenly intrude themselves, rising up, as it were, from below every thing of which we are conscious. These are not without some cause, but the cause is not in anything seen or felt or thought of. Some feeling lately repressed, some secret mood of mind, will give rise to ideas not connected with anything of which we are conscious. Various conditions of mind and body produce thoughts which have before been connected with similar states of mind and body.*

Besides Resemblance and Contiguity two other principles of association have been supposed, Causation and Contrast; but these two are only examples of the former. Many *causes* have some real or supposed *similarity* to their *effects;* many are closely *connected* in fact, and all are frequently associated in thought; so that naturally, by likeness and previous connection, the one introduces the other. The

* It has been supposed that in every case of suggestion, between the known *mental* antecedents and consequents, there are *material* antecedents and consequents. The suggesting *idea* in the Mind produces, it is said, an *impression* on the Brain; and this being connected with the *impression* already made there by another idea, this idea is suggested again to the mind. But all this is only conjecture. The intermediate *impressions* on the Brain are unobserved, imperceptible, inconceivable. Sensations do produce thoughts of similar sensations, and conscious states of the body reproduce moods of mind similar to those connected with similar states of body. But this is very far from the conclusion that all *ideas* leave *impressions* on the Brain, by means of which *thought* is suggestive of *thought*. The law of Continuity is observed in the connection of *mental* states and products with *mental* states and products, as much without Cerebral changes as with them. The latter do not explain the former. They are different in nature, and both are equally intelligible and unintelligible.

idea of the cause, therefore, suggests that of the effect; and the idea of the effect suggests that of the cause. Moreover *natural* causes and effects—and it is to these a suggestive power is attributed—are only known as *constant* connections, and therefore all their suggestive power must be in *resemblance* and *contiguity*.

Contrasts are often suggested, but in all cases there is *resemblance* as well as difference. The thoughts which come together in opposition are not of the most dissimilar objects, but of extremes in the same class. There is thus a twofold likeness. A palace suggests a hovel, partly because both are human habitations, but principally because they are the highest and lowest of their kind. So a giant suggests a dwarf, the greatest prosperity the greatest adversity. The occasional use of *contrasts* is great, but it would be no gain if beauty always suggested ugliness, pleasure, pain; virtue, vice; good, evil. Happily it is not so. Associations of contrast can be formed whenever wanted, and when once made they naturally recur, the more readily because of the interest they excite.

All the Laws of Suggestion may be comprehended in one general expression, that every state of Mind has some tendency to become more like a previous state. Likeness is increased by suggestions of Contiguity as well as by those of Resemblance, and in all cases the present is some reproduction and counterpart of the past.

It has been supposed by some that permanent impressions are made on the Mind or Brain by everything seen or heard, felt or done, and that whatever seems to be forgotten may and will be again remembered. Some things are well remembered after the lapse of many years, and causes to produce a peculiar primary impression may not be remembered. But these causes may be forgotten, or the present remembrance of distant objects may be due to many forgotten intermediate remembrances. It is certain that the

lapse of time does make the thought of past experiences less clear and complete, and at last recollection is quite impossible. As material impressions become less and less, and after a time are entirely effaced, so it appears to be with many mental impressions. That we should think of some past experiences is evidently of the greatest advantage, but that all should be subsequently remembered would be apparently useless and injurious.

The objects which leave the most permanent impressions on the mind are those, the remembrance of which is most desirable. This is seen in all the laws of Impression. Those which are remembered are reproduced, when and where they are most wanted. This is seen in the laws of Suggestion. Of all the past, the more recent resemblances and contiguities are more likely to be suggested, and these are the objects the remembrance of which is most important.

DIVISION IV.

NECESSARY LAWS OF THOUGHT.

BESIDES the Natural Laws of Thought, which are learnt from a large *experience* and show only what is *natural*, there are other Laws which state what is *necessary*. Their *necessity* is known only by reflection and inference, but their *reality* in some single cases is known intuitively. We have intuitive knowledge of only a few of the real objects represented by thought, but *thoughts*, as mental products, have an intrinsic *reality*, as pictures have, whether the objects represented are real or not. We have an intuitive knowledge of all our Ideas, and can consider and compare them, and discern what they are, and some of their relations. While in some thoughts we can know only what they are, and how they are naturally connected; in others we know what they *ought* to be, and *must* be, if thought be clear and consistent. Formal Logic has to do only with such connections, and they are therefore called Logical. What are styled the necessary Laws of Thought are propositions self-evident in small, simple cases; and similar laws belong to Intuitions and Beliefs.

I. The first is the law of Coexistence. Whatever is thought of as existing with something, which is thought of as existing with some other thing, must in thought *coexist* with that other. And whatever is thought of as existing

with something, which does not exist with some other, cannot in thought *coexist* with that other.

II. The second is the law of Comprehension and Exclusion. Whatever is thought of as *included* in something, which is *included* in something else, must in thought be *included* in that other. And whatever is thought of as *included* in something, which is entirely *excluded* from some other, must in thought be *excluded* from that other.

If a point is seen or thought of as *in* one circle, and this is seen or thought of as *within* or as *without* another circle, then the point must be seen or thought of as *within* or *without* the second circle. This is first perceived intuitively in some small single case; then on reflection it is believed to be *necessary*, and then to be true *universally;* not only of all points and circles, but of all objects, material or mental, in which there is *inclusion* and *exclusion*.

III. The third is the law of Similarity. Whatever is thought of as *like* something, which in the same respect is *like* something else, must be thought of as *like* that other. And whatever is thought of as *like* something, which is in the same respect *unlike* something else, must be thought of as *unlike* that other.

IV. The fourth is the law of Negation or Contradiction. Whatever is thought of as *being*, cannot at the same time be thought of as *not being;* or whatever is *affirmed*, cannot at the same time be *denied;* or *contraries* cannot both of them be true.

V. The fifth is the law of Excluded Middle. All things thought of are either *with* certain attributes or *without* them, and they belong to one or other of these two classes. Every thing is either *white*, or it is *not white;* every thing is either

intelligent, or it is *unintelligent*. Whatever is thought of as belonging to one of these classes, cannot be thought of as belonging also to the other. And whatever is thought of as not belonging to one, must be thought of as belonging to the other. No middle class can be thought of. Contradictory propositions cannot be both of them true, nor both of them false. If one is true, the other is false; and if one is false, the other is true.

What is simply *positive* in these Laws belongs alike to Intuitions, to Thoughts, and to Beliefs. What is *negative* belongs to all kinds of Thought and Belief. What is *necessary* or *universal* belongs only to Beliefs. Negations always imply *thought*, for they include more than is present and perceived. Necessity of every kind includes *belief;* for only that is *necessary* which we cannot *believe* to be otherwise. Universality also of every kind includes *belief;* for it includes what is absent as well as what is present, what is beyond the limits of consciousness or representation, as well as what is thus known or thought of.

Statements may be made which are contrary to these Laws, and when there is confusion of thought they may be accepted as True. But the *thinking* of them is impossible, if there be clearness of Thought; and the *believing* is impossible, if there is the exercise of Reason.*

* Propositions seen to be true or false, when compared with other propositions having the same subject and predicate, are sometimes called Immediate Inferences, to distinguish them from those in which the relation of two terms is known by comparison with a third. But what is known *intuitively* is not *inferred*. Some *particular* propositions being known intuitively, *universals* are inferred from them. In all propositions, besides the *thought* of subject, of predicate, and of copula, there is an *assertion* or *denial* of the connection indicated. Therefore *propositions*, mental and verbal, may represent the whole of Intuitions. But neither *terms* alone, nor *ideas* alone, represent the whole of what is known intuitively. As Terms precede Propositions, so Thoughts precede Beliefs.

PART III.

BELIEFS OR CONVICTIONS.

Division I.

NATURE OF BELIEF.

EXAMPLES AND KINDS.

Division II.

BELIEFS OF MEMORY. REMEMBRANCES.

PRIOR AND LATER LAWS.

Division III.

BELIEFS OF REASON. NATURAL CONNECTIONS.

SINGLE OBJECTS AND SIMILAR.

NATURAL LAWS. CAUSES AND FORCES.

INTELLIGENT CAUSES.

Division IV.

BELIEFS OF REASON. NECESSARY CONNECTIONS.

MATHEMATICAL—METAPHYSICAL—LOGICAL.

Division V.

MENTAL FACULTIES.

ATTENTION—MEMORY—ABSTRACTION.

IMAGINATION—JUDGMENT—REASON.

Division VI.

SUPPLEMENTARY.

ASSOCIATION—AUTHORITY.

Part III.

BELIEFS OR CONVICTIONS.

DIVISION I.

NATURE OF BELIEF.

Examples—Various Kinds.

1. ALL that we know and can know are what is, or has been, or will be, or may be, or must be; or their negatives. What *must be* belongs equally to the present, the past, and the future; for if *necessary*, it is so everywhere and always; but it has no other superiority. We are as certain of much that is not *necessary*, as of that which is supposed to be so. According to the common use of words, Knowledge is not restricted to what is known by Intuition and Demonstration, nor to that which is fully known and understood; but it includes all of which we are *quite sure*, whether remembered or inferred, partial or complete. Our secondary perceptions are *known*, as well as the primary; and what is learnt from the observation of Nature, as well as what is gained by abstract reasoning. It would be a foolish affectation to say that we did not *know*, but only *believed*, that a mountain was larger than the window through which it was seen; or that we were alive yesterday; or that the sun will rise to-morrow; or that we lived with human beings having thoughts, affections, and purposes like our own. When *believing* is distinguished from *knowing*, the former term is

restricted to *feeble* beliefs, while the latter is given to all *strong* beliefs. The greater portion of knowledge consists of what is surely believed, of Convictions of various kinds. These presuppose Intuitions and Conceptions, but greatly differ from them. The little knowledge that consists of Intuitions is of primary importance, being the foundation of all that is ever known; but it is very little, and alone would be of little value. Without prior Intuitions there could be no Thoughts; and without these there could be no Beliefs; and without these, Intuitions and Thoughts would be of no permanent use. The difference between *seeing* any object and *thinking* of it is most evident and important, and not less so is the difference between *seeing* or simply *thinking* of an object, and *believing* that it is, has been, or will be. This appears if we consider what we are *conscious* of, when various Beliefs or convictions are formed in our minds.

2. We *believe* that the sun rose and set yesterday, and will rise and set to-morrow; that we have been and shall be nourished by food; that it was dark to us a few hours ago, and will in a short time be dark again; that we had and still have friends and neighbours. We believe that the earth is a sphere; that China is on the other side of it, several thousand miles distant; that there are millions of human beings like ourselves living in different countries; that the Romans invaded and conquered Britain; that Julius Cæsar lived nearly two thousand years ago, gained victories, wrote books, and was killed. We believe that *all* plants grow and decay, and that *all* animals are born and die; that *all* fire will burn, *all* water freeze, *all* gold melt. We believe that two right lines cannot include a space, and that the angles of all triangles are equal to two right angles; that the product of the sum and difference of any two numbers is equal to the difference of their squares; that there is space beyond the walls of our house, and beyond the

most distant stars; that there was duration before we were born, and before the earth was formed; that contrary propositions are not both true, nor contradictory both false; that right is better than wrong, moral character of more moment than any outward condition. We *believe* all these things, and we *know* them. What is the nature of this Belief or Conviction?

3. In all these instances we find *thoughts*, and something more, of another kind. With thoughts—ideas, mental representations of objects—there are also Beliefs or Convictions. This is clearly another state of mind. It is perceived in consciousness to be different, and the causes, effects, and qualities of Belief are known to be different from those of simple Thought or Conception. Belief is produced by some kind of *evidence*, something present to the mind, through which something not present is in some measure known; and thus a mental *representation* becomes in many respects as the *reality*. There may be the same *thoughts* and different *beliefs*, and then the result is different. We *think* of some danger. If we also *believe* it to be real, we are *moved* to escape; but *believing* it unreal, we are *unmoved*. A man would be insane, if he pursued or fled from anything merely because the *idea* came to his mind, however clear and complete it might be; but with *belief* the same conduct is reasonable, and no other. We hear some testimony and receive *ideas*, according to the statements made. Afterwards we have *beliefs*, according to what is learnt of the trustworthiness of the witness, or the agreement of one testimony with another. Our *ideas* come often from mere *representations* of objects, verbal or pictorial, without any *evidence* of a corresponding *reality;* but our *beliefs* are generally the product of *evidence*, which is their proper cause.* What is *imaginary* has little

* Evidence differs from Belief, as *cause* differs from *effect*. We choose to consider the *evidence*, but do not choose the *belief*, which is the natural

influence on our feelings, and no proper influence on our *conduct;* but what is *believed* should always affect our *feelings* in some degree, and is a reason for *conduct*, not less than a present reality. Thoughts are clear or obscure, but Beliefs are strong or feeble; and the latter often pass, by imperceptible gradations, from the faintest doubt to the firmest certainty. That Belief is not merely the association of *ideas* appears clearly in consciousness, and is further evident from several considerations. There is often the strongest *belief* when there is no difficulty in the separation of *thought*, and we can easily *think* of many things as combined which we cannot *believe* to be so. Association is *present;* remembrance and inference refer to what is *not* present. Whatever be the object of Belief, whether body or mind, the natural or the necessary; whatever its cause, our own remembrance and reflection, or the testimony and judgment of others; the nature of Belief, as a conscious state of Mind, appears to be the same. It is the same, whether feeble or strong, the one often growing to the other by the simple increase of the same evidence, or by additions of another kind.

consequent. In most cases the difference is manifest. When a *proposition* is said to be *self-evident*, the meaning is that it contains all that is needed for full *belief*. Some propositions are self-evident, because the *subject* is seen to contain the *predicate*. This is the *evidence*, that the predicate may be *affirmed* of the subject in a mental or verbal proposition. Axioms are self-evident, because what is *perceived* in a single case is therefore *believed* of the whole class of similar cases. Intuitions and Remembrances are *evidences*, on account of which the propositions are *believed*, which declare what is perceived and remembered. Moreover they have characteristics, which are both *causes* and *reasons* for *belief*. It is chiefly because of repeated similar intuitions and remembrances, that any single intuition or remembrance is surely known. When it is said that we *believe* the reality of what we see and remember, reference is made to what is fully known, as *evidence* of what is not so fully known. Evidence and Belief are often closely combined, but they are never the same.

4. Belief differs from Thought, and it also differs from Intuition. Intuitions respect only the present, the real, the singular, the finite; but Beliefs respect past, present, and future; they extend to the necessary, the universal, the infinite. Intuitions result from the *presence* of objects, and must cease when they are absent; but Beliefs result from the exercise of memory and reason; they come and continue when their objects have no present existence. Not till an object ceases to be *present* is it *represented;* and when not known by Intuition it is known by Belief. The object of an Intuition is individual, belonging only to one; that of Belief may be common and the same for all.* Intuitions being all certain can never be contrary one to another; but Beliefs are often uncertain, and evidences conflicting, and then the conclusion is according to the balance of Evidence. We do not *believe* our present existence, for this is directly *perceived;* but we *believe* our past and future existence, for these are *remembered* or *inferred.* We do not *believe* that we have our present thoughts and feelings, for they are *perceived;* but we *believe* that we have *capacities* which are *inferred* from *states* of consciousness, and include some continued existence, past and future. So we *believe* all existences, mental and material, external to ourselves. What is beyond Consciousness can be known only by Memory and Reason. It is *known* because *believed.* The proverbial

* Sensations and primary perceptions, intuitions and ideas, belong only to the individual. Others have those which are *similar*, but they cannot have the *same.* Beliefs must in like manner be our own, and as states of mind they are only ours. But most *beliefs*, as well as most *ideas*, refer to some object that is the same to all. There is one and the same sun to all men. The fall of a house is one event known by many. The spherical form of the earth is the one form, and the law of gravitation the one law, known by all intelligent beings. Knowledge, as a state of mind, is as diverse as the minds *knowing*, but that which is *known* may be one. The objects known by Reason are the same for all, when there is but one; and they are several, according to the number of objects, not according to the number of minds.

saying, that *seeing* is *believing*, does not mean that they are the *same*, but that the former is a sufficient *cause* or *reason* for the latter. Much confusion results from neglecting the great difference between Intuitions and Beliefs.

5. Belief then is the state of Mind through which what is represented in Thought becomes to us, more or less, as though really present. The *representation* is partially what the *presentation* was, or what it would be if renewed. For the preservation and increase of knowledge, for the continuance and excitement of feeling, for the direction and regulation of conduct, what is *absent* and *believed* is, in some measure, as though it were *present* and directly *perceived*. Belief is commonly the consequent of Thought, and the antecedent of Action. As we *think* we *believe*, and as we *believe* we *act*.

6. The various kinds of Belief are often associated, but they are easily distinguished by their different causes. Many things are *believed* because they are *remembered;* others because they are *inferred* simply as *real*, on the ground of a large experience and much similarity; and others because they are *inferred* as certain and universal, from a very small experience with apparent necessity. There are evidently then three descriptions of Belief: (1) That of Remembrance; (2) That of Inference from natural connection; and (3) That of Inference from apparent necessity. The first are Convictions of Memory, the others of Reason. Many *beliefs* are transferred by Association from their proper objects to others occasionally connected with them, as mental *feelings* are transferred. In such cases what is *believed* is not really *remembered*, nor rightly *inferred*, and it has no proper cause or reason. Beliefs of every kind may always be expressed in the form of Propositions, in which there is a Subject, Predicate, and Copula; and all Beliefs respect Existence, Co-existence, Sequence, Resemblance, and Causation.

DIVISION II.

BELIEFS OF MEMORY.

CHAPTER I.

REMEMBRANCES—NATURE—EXTENT—EVIDENCE.

1. REMEMBRANCES are the most important of our Beliefs; for they exceed all others in number, and all others are dependent on those of Memory. In every complete Remembrance there are the two different elements of Thought and Belief. There is a Thought, more or less clear, of some former experience—of something before seen, heard, felt, done; and there is a Belief, more or less strong, that what is now only represented in consciousness was once known as a present reality. The Thought has respect to some absent object, or the former presence of what is again present, and to some past time; and the Belief refers both to the object and to the time. Thought and Belief are generally combined, but not always; and frequently as the Thought is clear the Belief is strong, but it is not always so. They are different states of Mind, and their laws are similar, but not identical.

Many thoughts come to our minds from the past, without any conscious reference to a former experience. It is generally so with the meaning of words, and the distance of visible objects. Sometimes there is a slight, indefinite remembrance of the past; as when persons are seen or sentences read, and we know that we have met with them

before, but have no remembrance of any time or place. In other cases we have clear ideas of some object and its time, but are not sure that they are correct representations of the past; and again in other cases we are sure that something was formerly experienced, though our present ideas are far from being clear and complete. But there are remembrances so clear and strong in every respect, that they are surpassed by no other knowledge. The clear and strong remembrance of what was seen or heard, felt or done, a few minutes or hours ago, will give a knowledge of the past as sure as any knowledge of the present. Often merely by Memory we know what belonged to past months or years, with as much certainty as the events of yesterday. This is a universal and unquestionable experience.

2. The Belief which is included in *remembrance* may at first be small, and become strong through repetition and reflection. What has been seen may be feebly remembered when first thought of; but as the *belief* is renewed again and again whenever the *thought* is recalled, there is a stronger conviction of its truth. We are sure that *remembrances* are not delusions, as we are surer that *intuitions* are not, when we find that they are often renewed, and that the *belief* of their unreality or untruth is quite impossible. Some remembrances which are but feeble we believe may be erroneous, and these are found to be sometimes true and sometimes untrue; but there are remembrances so strong that we cannot believe them to be untrue, and experience shows them to be always true. The *belief* of some remembrances is often extended, from the *thoughts* to which the belief primarily and properly belongs, to others associated with them. We seem to remember the whole, when we really remember only a part. Such seeming *remembrances* may be disproved as seeming *intuitions* are; but there are others which cannot be disbelieved, and are certainly real.

3. In *remembrance* we have *thoughts* associated with *thoughts*, but we have more than a combination of ideas; for there is also a measure of *belief* respecting the past. Ideas may be closely combined, and form a single object of present consideration; but what is *remembered* is thought of as past, and believed to be a former experience. The present combination of thoughts is one thing, the belief of the object remembered is another. As the simple connection of ideas in the mind cannot alone give any knowledge of the past, so it is with the supposed impressions on the brain.* The present connection of these could give no knowledge of the past, any more than the juxtaposition of words on a page or colours on a picture. Remembrances are not confined to sensations, *material* impressions; but they include inferences, emotions, affections, resolutions—*mental* states of every kind. Everything once known, in any manner or degree, may be remembered, and thus all knowledge is preserved in the Mind.

4. Intuitions of every kind, when they pass from consciousness, leave impressions of which we are not conscious, and through these impressions thoughts or representations are afterwards formed. Beliefs also of every kind, when they pass from consciousness, leave impressions of which we are not conscious, through which the beliefs are again restored. Beliefs, as conscious states, are as transient as Intuitions; but while the latter are generally reproduced by a new presentation of the object, the former are generally reproduced simply through the impressions left in the Mind. We look again to a coloured object to renew the *sensation*, and think again of some pleasant or painful object to renew

* That *atoms*, without consciousness, should produce consciousness by their union and separation, and thus create *intelligence*, with a knowledge of both present and past, is a supposition hardly worthy of the name of science or philosophy.

the *emotion;* but our former *beliefs* are renewed by remembrance without any reconsideration of evidence. The beliefs of Reason are preserved in the same way as the beliefs of Memory. They rise again in the Mind, without any thought of the processes and proofs by which they were first produced.*

5. Most wonderful is the number of remembrances to be found in every human mind, their variety and correctness; their removal from consciousness when they are not wanted, and their return again and again when they are wanted; the facility with which they are recalled, and their opportune recurrence when they are not sought for. We need not look to extraordinary instances; the memory of every child duly considered is astonishing. Some thousands of objects are remembered: persons, with their names and characters; events, with their time and place; things, with their various qualities; words, with their proper signification. These are remembered after months and years; they are brought back with little effort, and often come of themselves just as needed. The remembrances of most persons go back to the years and lessons of childhood, and include what has

* The *unconscious* states are different from the *conscious*, and they should be distinguished, though equally real and important. It is a change in the common use of language, when it is said that there are *unconscious* sensations and perceptions, *unconscious* ideas and feelings. But it is according to the common use of words to say, that that we *know* and *believe* that of which we are not now conscious. Intuitions are always with consciousness; but not so Beliefs. When not conscious of believing, we have what is called Belief, because it is the effect of a previous belief and the cause of a future. The conscious state is transient, the unconscious is permanent. Unconscious states *follow* and *precede* those of which we are conscious, but they differ essentially. There are *unconscious* states of action and impression, of knowledge and belief; but not *unconscious* states of perceiving and thinking, feeling and choosing.

been witnessed in many hundred scenes, heard from many hundred persons, read in many hundred books. Much is forgotten, but much is remembered; and more might be remembered, and recalled more readily and correctly, if the laws of Memory were properly known and used.

6. It may be asked, How do we know that our remembrances are true? that there were formerly such realities as Memory now represents to us? This is not always known; for all apparent remembrances are not true; and some are shown to be false by superior contrary evidence. But there are remembrances which have nothing against them, which are so clear and strong that they need no proof or confirmation, being in the highest degree self-evident; and it is by these that fainter and feebler remembrances are either confirmed or corrected. It is impossible to doubt some, and we learn by them to distinguish the trustworthy and the untrustworthy. The knowledge of the *past* must always be different from that of the *present*, and can only be *representative*. But though different in nature, it may be equally certain. We are as sure of the truth of some remembrances as we are of the reality of any Intuitions. Without Memory we could have no knowledge of the past, nor could we even think of it; but by Memory the past is known to some extent with perfect certainty. No sane persons disbelieve their own past existence; nor can they have the least doubt of the real past presence of a friend, if they have a clear and strong remembrance of seeing his face, hearing his voice, touching his hand, a few minutes before. There would be as sure a *knowledge* of this past as there would be of the present, if he were again seen, heard, and touched. It is the same with many recent remembrances, which are equally clear and strong. They never have been disproved, and they never can be. They contain their own evidence, and there is nothing superior. The convictions of Memory

may be confirmed by the repeated experience of our own minds, and by the similar experience of others; and so feebler convictions are either established or removed. Thus Reason is associated with Memory, and we may give a *reason* for the *belief*. But in all cases the truth of some remembrance is already accepted.*

Remembrances are often tested by a recurrence to the object remembered. Thus we look again to a picture, a building, or a book, and find that our remembrance is right or wrong; and so learn to trust or distrust similar remembrances. But only by Memory do we know that any picture, building, and book existed and were seen; and only through an experience preserved by Memory can we know that the present objects and the past are the same, and that they have not changed.

As all our knowledge of the past comes from Memory, so it must be by remembrances which cannot be doubted that other remembrances are known to be true or untrue. A disbelief of some remembrances would be proof of insanity. The evidence of Demonstration depends on that of Memory, and cannot be greater than that of some remembrances. Most inferences are founded on remembered facts, and the end of an argument can never be known to be more true, than the remembrance of the beginning. As

* Every remembrance gives some direct knowledge of the past, and without this it would not be a remembrance. But the *distance* from the present time of what is remembered, is generally known by comparison. The *distance* from us of objects of *vision* is learnt entirely by the experience which connects the sensations of sight with those of motion and resistance; but there is no other faculty than Memory to give any knowledge of the past. Distance of time may be partially estimated by the clearness and strength of the remembrance; but it is commonly measured by the relation of one remembrance to another. That seems to us to be long ago, which has many intervening events, or which is contemporaneous with what has been considered to be so many days, months, or years ago.

many supposed *intuitions* are not such, but associated thoughts and beliefs, so some supposed *remembrances* are merely the result of association. But there must be *real* remembrances to occasion *apparent* remembrances; some that do not result from *association* to account for those which do.

The Beliefs of Memory respect only our own Experience; for we cannot remember what others saw, or thought, or felt. But the truth of some Testimony is known with perfect certainty, and through this the remembrances of others are added to our own. The intellectual progress of individuals depends chiefly on the preservation and use of what they remember. The progress of the human race depends on the transmission of the knowledge of one person to another, of one nation to another, of one generation to another.

CHAPTER II.

LAWS OF BELIEF—PRIOR AND LATER.

IN Memory the natural laws of Belief are like the natural laws of Thought before noticed. That in the primary presentation of any object which favours the subsequent formation of Thought, tends also to produce Belief; and that which afterwards gives occasion to the former, does the same for the latter.

I. What has interested and affected the mind in any way is not only *thought* of more clearly and completely, but it is also *believed* with more confidence and correctness. We are more sure of the past reality of what excited curiosity, caused pain or pleasure, admiration or disgust, than of that which was regarded with indifference.

II. As the continued or repeated presence of any object leads to subsequent Thought, so does it increase Belief. What was seen for a moment or but once will neither be *thought* of so readily, nor be *believed* so firmly, as that which was seen for a long time or frequently. And so with every other presentation.

III. As what is regarded with Attention is afterwards *thought* of more clearly and completely, so it is *believed* more firmly and surely.

IV. As the Excitement of feeling conduces to the production of Thought respecting associated objects, so it

causes a stronger Belief respecting them. We are more sure of the past reality, both of the causes and the accompaniments, of any mental excitement.

These laws of Belief agree with the Prior laws of Thought. The following agree with the Later:

I. Similarity, which leads to *thoughts* of the past, also brings *beliefs* respecting the objects thought of. As thoughts are often suggested without any conscious reference to the past from which they come, so they are often without any *belief* respecting the past; but as they often include a reference to the past, so they are often connected with a *belief* resulting from Memory.

II. Contiguity also has an influence on our Convictions, as well as on our Conceptions. There is a stronger *belief* in the reality of our former lives, as well as clearer *thoughts* of the past, when we revisit the places where we dwelt in childhood. We may have a firmer conviction of the events of history, when we stand in the very places made memorable by what occurred there in former times; but this may come from association, with or without evidence.

III. States of Body and of Mind, both conscious and unconscious, similar to those before experienced, assist in the production of the *beliefs* of Memory, as well as the *thoughts* of what is remembered. We cannot at all times *think* of the past with the same clearness and completeness, nor are we always equally *sure* of the correctness of our remembrances. Memory is sometimes clearer and stronger than at other times. In *similar states* of body and mind, that will be remembered, both thought of and believed, which cannot be remembered at other times. Associations may cause an *extension* of belief, and give no evidence; but they may also cause a better *exercise* of Memory, and so

supply what was wanting. The effect of *similarity* in states of mind clearly appears in the greater facility with which everything continues to be remembered, when it has been once reproduced. What is read once or twice, if immediately recalled, will be better remembered permanently, than if read twenty times without any mental reproduction. One remembrance is more like to another than the primary presentation is, and therefore is recalled more easily and correctly.

Whatever has been known may for a time be remembered; but as with the lapse of time Thoughts of the past become less clear and complete, so do the Beliefs of Memory become less strong and sure. What was seen, heard, felt, done yesterday may be remembered with entire certainty; but not so what belongs to months and years gone by. Generally the thoughts become fainter and the beliefs feebler with the progress of time, but the one may be preserved without the other, at least partially. We have often thoughts perfectly clear which come from the past without any corresponding belief, and even without any thought of the past. The clear and strong remembrances of childhood which aged persons sometimes have, may be attributed in part to the more vivid feelings and perceptions of youth, and the more retentive memory of early life; and in part to the many intermediate remembrances which may be forgotten.

If we wish to remember what is at any time before us, we should look at it steadfastly and repeatedly, with attention and interest, connect it with what we already know, and with what we can easily refer to; and recall it soon, that it may be ready for future use. If at any time we wish to recall what belongs to the past, we should attend to something that by associations of similarity or contiguity may serve to suggest it. Some aid may be gained by placing ourselves in a state similar to that before experienced in connection with that which we desire to recall.

In Memory the laws of Thought and of Belief are similar, but they are not the same. They generally coincide, but not always. The natural *causes* of Belief may be forgotten; but if remembered and considered, they are seen to be *reasons* for the *belief* they produce, though not necessary causes. There is a fitness, usefulness, *reasonableness* in the laws of Memory,—that *stronger beliefs* should be produced by intensity, repetition, attention, excitement; and be reproduced by similarities and contiguities. This would not enable us to anticipate the laws, but when they are known by Experience, their *reasonableness* gives to them additional interest, enlarged extent, increased certainty and value.

DIVISION III.

BELIEFS OF REASON. NATURAL CONNECTIONS.

CHAPTER I.

NATURAL INFERENCES—LAWS OF BELIEF.

EXPERIENCE gives in the first place Intuitions, which are comparatively few and transient; they come from within and from without, and respect various objects, but they have the same nature and certainty. They are followed by Remembrances, which are innumerable and are easily renewed from within; they always have the same nature, though they respect objects of various kinds, but they differ greatly in degree, some being certain and others doubtful. After these come Inferences, which are countless in number and boundless in extent; they respect objects of every kind, and they differ in strength, rising from the faintest belief to the firmest—to the highest certainty. Experience and Memory give all *remembrances*, and thus knowledge is preserved; while Experience and Reason give all *inferences*, and by these knowledge is increased. Beliefs coming from Memory alone, have respect only to the *past*, and to the experiences, bodily and mental, of a single person. Beliefs coming from Reason, respect past and present and future, and they refer to every object of which we speak or think. The Beliefs of Memory are those which are most easily studied and understood; for we remember now as we did at the beginning of life. But the Beliefs of Reason, which

now follow any single observation or experiment, differ much from those primarily produced; for our present *inferences* are affected by a prior and larger experience, as well as by the ways of thinking and believing which have become habitual. At first all knowledge was limited to a few objects, and there could only be the *beliefs* which arise from a *small* experience. To reproduce now the earliest convictions we must take examples of such a kind, that they will be free from the influence of any other experience or any former associations. It is at once evident that many Beliefs result from Experience. All believe, in some way, that what has been will be. All expect to find again what experience has already shown. But consideration is requisite to ascertain how these beliefs are formed, and how they are regulated. Some Laws are simple and obvious. Beliefs resulting from the experience of natural connections refer, either to the *same* objects or to *similar*. We begin with the former.

1. Single Objects.

I. The known existence of any object produces some belief of its continuance; and the longer it is known to continue, the stronger is the belief of further continuance.

A single momentary experience of any kind would alone give only some knowledge of the present. There could be no *belief;* for there would be no *thought* of past or future. But when the experience is extended or repeated, there is some remembrance of the past and some anticipation of the future. Some *thought* and some *belief* of both naturally arise. The *ideas* come from *association*, the *beliefs* from other principles, one being attributed to Memory and the other to Reason. If we *see* an object like a flower, and know not whether it be a picture or a plant or waxwork or stone, we *believe* that it remains when we look away from it, and that it will be seen when we look again. The *longer* it is seen the *stronger* is our belief of its continuance. We

have some expectation of seeing again what we have seen for a short time, or only once; but as it is seen to remain, and is found again and again on a renewed observation, we are more and more assured that it will continue, and be found when again looked for. The continued or repeated presentation of any object causes it to be afterwards *thought* of, and also to be *remembered* as a *past* reality. But besides this it produces some *belief*, that what *was* seen *still* exists, and is a reality, though unseen; and that what is *now* seen will be in the future. We *think* of what was once perceived; we *believe* that it did then exist, and we also *believe* that it is and will be. The repeated presentation of an object may not make the *idea* clearer, but it always strengthens the *belief* of its continuance.*

This Belief belongs to all experience, and is according to its extent. We believe that the sun is in the sky when clouds conceal it, and that it will rise and set to-morrow as to-day. We believe that the trees and houses seen yesterday are still standing in the same places, and that the friends we then met are still living. We have at first no other reason for our belief than the experience by which it is naturally produced—the slight expectation which follows our perceiv-

* Additional observations of less general interest are given in this and some following notes. It may be asked, How can we *think* of the future, which must be beyond experience? We do this through remembering the past. The minimum of *duration* is given in consciousness, and this is enlarged in thought by simple addition, and is known by memory. Thus we have the idea of the *past*, and from this the idea of the *future* follows. If a line is *seen* to extend in one direction, it is easily *thought* of as extending in the other; and so if an object is *known* to have been, its future existence is easily imagined, this being merely an enlargement of duration in another direction. As something *past* is to the *present*, so the *present* is to something in the *future*. Remembrance must precede Anticipation, but both are equally natural. From the beginning of life we look backward and forward. We could not *think* of the past without some prior *knowledge* of the past; but we *think* of the future before we *know* the future.

ing any object, and is increased by every repetition of this experience. If a small experience did not produce some belief, the largest could not; but when a small experience produces a little belief, a large experience naturally produces more. The Experience which leads to the belief of continued simple existence produces the same belief in respect to the substance, the figure, the position, the qualities, and the powers of any observed object. There is at first no cause or reason for any difference, and there is at first the same belief respecting all.*

II. The Belief which is stronger as any known experience is enlarged becomes weaker as the consequent expectation is extended.

We have not the same belief that an object will continue

* How are two or more *appearances* known to be of one real *object?* A brief experience of the existence of any object is no *reason* for believing that it *must* continue, or *will* continue for a long time; but it is a *reason* for believing that it *will* continue for some time, and a probable limited belief is all that at first follows. Experience is the natural *cause* of this expectation, and the sufficient *reason*, as much as any one thing can be a reason for another. The existence of any object, substance and properties, being some *reason* for believing its continued existence and reappearance, it is natural and reasonable to believe that a *similar* appearance is of the *same* object, and not of another. There is a reason for expecting the *same*, when there is no reason for expecting another. Thus repeated *similar* appearances are properly attributed to one object, when there is no reason to suppose several. If the appearances are different, the objects will be supposed to be different. By a large experience we learn that there may be much similarity of appearance in different objects, and some differences of appearance in the same object; and so the beliefs first produced are changed by a later experience; but the same laws remain. A *single* experience, without reflection, produces a *slight* belief; and this, when remembered, is seen, to be a *reason* for the belief. The *repetition* of the experience will without reflection, produce *increased* belief; and the enlarged experience, when remembered, is seen to be a *reason* for the increase. The latter is the *conscious*, the former the *unconscious* exercise of Reason.

for a single day, and for a thousand years. The conviction becomes less as it is extended from a day to a month and a year, and is still less if extended to a hundred and a thousand years. It may be said that whatever exists *must* continue, unless there be a cause or reason for its ceasing; and will be believed to continue *indefinitely*, when this is not known. But there is no such natural conviction at first. A cause for *continuance* is as necessary as a cause for *cessation*, and neither are thought of with our early experiences. If the one should not be supposed without a reason, neither should the other. A cause and reason for some continuance are found in present and past existence, but only when the *expectation* is in proportion to the *experience*. Thus limited, the conviction of a small experience will be confirmed by the largest, but otherwise it will be contradicted by the experience of every day; for daily things are found to cease without an apparent cause of cessation. What has been experienced for a thousand years, will be expected for another thousand years, as what has been experienced for a single day will be expected for another day. No natural objects are believed to be permanent where there has not been a long experience of their continuance, and all are expected to endure as they are known to have endured. The persistence of *matter*, under all changes, is a lesson learnt by the largest experience. The apparent destruction of *substance* is found to be only a change of *form*.

Most objects observed have many parts and properties, and all of these may continue, or in some there may be change. Thus the colour, figure, position, of the supposed flower may all remain the same, or some may alter. If all remain, there will be the same expectation of permanence in each; while if some have changed, in these change will be expected. Where no change has been observed, there will not be the same belief that *each* will continue, and that *all* will. If a change is *possible* in each part and property,

it must be more *likely* that it will occur in *some* one of many, than in *any* particular one; as it is much more probable that one of a thousand houses will be burnt, than that our own or our neighbour's will be. We have not the same convictions respecting *one* and *many*, each part and the whole; but the laws of belief are the same. Combining the two mentioned, it may be said that Beliefs respecting a *single* object, derived simply from Experience, vary *directly* with the extent in duration of what is known, and *inversely* with the extent of what is inferred. That a minute's observation now produces a belief in the long continuance of some objects, while in others the longer they have been observed the less continuance is expected, is owing to a large experience of *similar* objects, which we have next to consider.

2. Similar Objects.

I. What has been found to be connected in two or more objects, is believed to be connected in others; or where partial similarity is seen, further is expected. And as our experience of similar objects increases, so does our belief that what has been found in some, exists in others.

A pearl is found is one oyster and another; it is expected in a third. Quinine has cured two patients; it will cure another. Some fire has burnt, some plants have decayed, some animals have died; therefore we believe that other fire will burn, other plants decay, other animals die; and the more instances have been observed, the more sure is the belief. To take an example that is separate from all common experience. If we saw several covered plates in any room, and on removing one cover found something under it, we might have no thought and expectation respecting the cover of the next plate. But if something were also found under the second, there would be some belief that it would be the same with the third. If this were seen, there would be a stronger belief respecting the fourth; and so on with regular

increase. If something were found under nineteen covers, we should be sure that it would be the same with the twentieth; and if it were so with ninety-nine, we should be quite certain of the hundredth. The larger the experience, the stronger the belief respecting *similar* objects, as well as respecting the *same*. All knowledge, common and scientific, of general coexistences and sequences is thus obtained.

II. The belief respecting *similar* objects lessens as it is extended to a greater number.

No one would have the same expectation that something would be found under twenty covers as under one; no one expects to find pearls in all oysters. We believe that *all* fire will burn, *all* plants decay, *all* animals die; but this is because of the largest experience possible, which has constantly shown these connections. Without this there would be a stronger belief respecting five than fifty, respecting fifty than five hundred. The beliefs of children may be strong, when their experience is small; but their inferences are equally small. As the objects of any belief arising from experience increase in number, the belief decreases in strength. The beliefs respecting Similar objects vary *directly* with the number of instances contained in a known experience, and *inversely* with the number contained in the inference.

III. In reasoning from some objects to others, we regard not only the number of *instances*, but also the number of *similarities*. When likeness is observed, not in one respect only, but in many, there is a stronger belief of further likeness. The growth of one plant leads us to expect the growth of another, and the expectation is increased when more similarities are observed; as that the plants have the same specific character, are like in age and size, in soil and situation. To return to our plates. If under a tin cover one

of copper was found, and under the copper one of silver, then if under the second tin cover there was found one of copper, there would be a stronger belief from this double similarity that a silver cover would be found also. Thus we reason from one animal to another, and with more confidence, if they belong to the same species. So we reason with more confidence from men to men than from animals to men, and with most confidence where there is a similarity of character and condition. That is said to be *probable* or *likely* in which partial *likeness* is known, and further *likeness* is inferred; and the greater the known *likeness*, the stronger the inference, Former experiences may be of many *instances* and few *resemblances*, or of few *instances* and many *resemblances*. Only by experience can it be known which of these is of greater importance.*

IV. But the more likenesses are contained in the inference the feebler is the conviction. That the second plant will

* ANALOGY, when applied to *arguments*, has been used in many senses, but generally it denotes those which are inferior to arguments from Experience. The inference is drawn from *similarities* which may be found in objects of different *kinds*, and not from those which make but one class. In reasoning from plants to animals, and from animals to men, the argument is *analogical*, unless it refers only to the nature *common* to all. As *similarities* increase in number the *argument* is stronger, while all *differences* lessen its value; but no *similarities* alone are *proofs*, if the reasoning is from one class to another. It is an argument from Experience, that such *life* as we know is to be found everywhere in this world, but it is simply from Analogy that such life is supposed to exist in other worlds. It is an argument from Experience, that *some* instincts of animals are affected by the habits of their progenitors; but it is only an argument from Analogy that the faculties of all animals are modified in the same way; and it can hardly be called *reasoning* from Analogy, when the highest *intuitions* and the strongest *convictions* of human minds are attributed to the habits of human ancestors, or the experience of their supposed animal progenitors. Analogies suggest *hypotheses*, show what is possible, and sometimes what is slightly probable; but they are never proofs.

grow we infer from the growth of the first; but with much less confidence should we conclude that it would grow in the same time and way, and yield the same quantity and quality of fruit. As inferred similarities increase in number the conviction becomes less. Some likenesses are connected with many others, and some with few; but these differences are learnt only by large experience.

All these laws are comprehended in one general statement. Beliefs arising from Experience, respecting the same or similar objects, vary *directly* with its extent in duration, in number of instances, and in similarities; and *inversely* with the extent of Inference in the same three. The Laws of Impression, of Memory, and of natural Inference, are similar, but they are not identical. Thought is not the same as Belief, nor Remembrance the same as Inference. These laws often coincide, and their agreement is of great advantage. The laws of natural inference are laws of natural connection, not of necessary; they are known through the exercise of Reason on Nature, and not on Abstract Thought. And as the feebler convictions of Memory can be confirmed only by stronger convictions of the same kind, so the feebler convictions of Reason can be confirmed only by the stronger.*

Inferences from Experience are often presented as necessary. It is said that what has been *must* be in all *similar*

* Besides the laws of Intuition, Thought and Belief, before given, there are two laws or rules often mentioned, which respect only Inferences from Nature—the laws of Sufficient reason and of Parsimony. 1. There should be no *inference* without a sufficient *reason*, and the inference should be according to the reason. The law that nothing *exists* without a sufficient reason, is a metaphysical principle rather than a natural law. 2. No more *causes* should be inferred than are necessary to account for any facts. When *known* causes are *sufficient*, others are not to be supposed; for they are without evidence. Many *causes* are assumed to be *sufficient*, when they are not so really; and others are conjectured, because the *real* causes are not considered.

cases. This is true if the *similarity* be *perfect*, but not if it be *partial;* and the latter is all that is shown in Experience.

The convictions of Experience extend equally in every direction. We do not believe that objects began to be when their existence was first seen, or that they cease to be when no longer seen, or that they exist alone, with none like them. Nor do we believe that what we see now has been always, or always will be, or that similar objects exist everywhere. Our inferences, if natural and proper, will be according to our experience. Inferences of the past from the present, of the distant from the near, may be diminished or destroyed by contrary evidence. But this does not affect the truth of natural convictions; for where Experience is limited, so is the natural and proper Belief. The belief of *past* existence does not extend as the belief of the *future* does, because it is overcome by the *absence* of other evidences which attend real existence.

That some Convictions of Experience are according to the Laws stated will not be doubted; but it may be questioned if all can be thus accounted for. Apparent exceptions are innumerable. Often single and short experiences are followed by the strongest Convictions; while a long experience may lead to the belief of a short continuance, and the lessons of a large experience may be apparently contradicted by facts. But this is not inconsistent with the Laws stated; and if they are sufficient to explain and justify all natural Convictions, no other laws should be supposed. Our present Convictions are always determined in some degree by General Experience, and when this is large and constant it changes the Convictions which follow from any particular experience alone. That a piece of gold once weighed will always have the same weight, is a belief, not to be attributed to our experience of this piece of gold, but to all our experience of other pieces of gold, of other metals,

of other solids, and to the universal experience of mankind. That the longer a plant or animal has lived the less of life remains, is a belief derived from all our own experience, and that of others, respecting the duration of life. A single experience may be sufficient to show that some object belongs to a Class, the properties and laws of which are known by a large and constant experience; and therefore the object, though observed but once, is fully and surely believed to share the same properties, and be subject to the same laws. There may be apparent exceptions which are not real, and require for their explanation only more correct observation, or a little more knowledge of natural objects. Natural powers of various kinds give rise to unexpected results, without any violation of Natural Laws. If any object is referred to a Class, to which it does not really belong, what is seen, or attributed to it, will appear to be contrary to some law of Nature; but when referred to its proper Class, it is found to be an example of the same or some other Law.

3. Variable Experience.

1. Very often observed Natural connections are not *constant* but *variable*, and the Belief then produced is less, according to the proportion of instances of one kind to instances of another. If twenty like seeds have been sown and only twelve have grown up, then there are twelve instances to cause an expectation of success, and eight to cause an expectation of failure. So if a mark were hit twelve times out of twenty, there would be a corresponding belief that it would be hit the next time. If of known similar schemes three out of four have prospered, or if of known similar testimonies three out of four have proved true, then belief respecting another scheme or another testimony will be in proportion to these numbers. It is not often that exact numbers can be applied to ordinary beliefs, but they

may be used approximately, and the consideration of the principles of belief respecting *variable* connections is useful at all times. As what has been often and always observed produces the firmest conviction, so what has been sometimes observed produces a feebler conviction, as it is of frequent or rare occurrence.*

As the consequents are inferred from the antecedents, so the antecedents are inferred from the consequents. The inferences are certain, if the antecedent always has one consequent, or the consequent always one antecedent. They are only probable, if there be a plurality of effects or a plurality of causes. As rain always produces wetness of the ground, the effect will with certainty be inferred from the cause; but as wetness of the ground is sometimes produced by the fall of rain, and sometimes by artificial irrigation, the fall of rain can be inferred only as a probable cause, more or less probable, as the effect is produced more frequently by this cause than by the other.†

* In the examples above given, if belief is merely according to *actual* experience, the numerical expression of probability will be for the first 12 to 8, and for the second 3 to 1. Or, taking unity to denote a constant experience, $1 = \frac{20}{20}$ in the one case, and $\frac{4}{4}$ in the other, and the probabilities will be, $\frac{12}{20}$ to $\frac{8}{20}$, and $\frac{3}{4}$ to $\frac{1}{4}$. But prior to experience there might be some expectation, and if nothing were known to favour one of two suppositions more than another, there would be the probability of $\frac{1}{2}$ before experience, and when this is added the numerical expression for the two series will be 13 to 9, and 4 to 2; $\frac{13}{22}$ to $\frac{9}{22}$, and $\frac{4}{6}$ to $\frac{2}{6}$. As there are various *instances* so there are various *resemblances*, whose argumentative value is estimated in the same way.

† From the rising of the sun we infer certainly the diffusion of light, and from the diffusion of light the rising of the sun. From the sowing of corn we infer the growth of wheat, and from the growth of wheat the sowing of corn. From the presence of men we infer the formation of dwellings, and from the formation of dwellings the presence of men. When the connection is not constant the belief varies accordingly. Generally, but not always, industry obtains success, crime meets with punishment, good conduct ensures esteem and reward. According to the frequency of the connection will be the strength of the belief. Where the same *effects* result from different *causes*, that cause is inferred

2. As all knowledge depends on the exercise of our own faculties, so all inferences are founded primarily on our own experience. But when we have some knowledge of ourselves and of others, their experience is added to our own, and most inferences rest on this wider and surer basis. That the belief of Testimony results from Experience appears from many considerations. Where there is no *experience* of the truth of testimony, or of human truthfulness, there is no *belief;* where there is *belief* there has been a corresponding *experience.* As the one *varies,* so does the other. That all Testimony is true would be false; that some is true would be useless. Experience shows what is to be trusted and what is not. We find that some Testimony is always true, and that some persons never deceive. Therefore we have the firmest assurance, from the evidence of our own uniform experience, that the knowledge given by *some* testimony is as sure as that of our own experience. It matters not that testimony of *another* kind is often not true, and that persons of *another* character often deceive. This does not affect our belief in the *testimony* which has never been found to be untrue, in the *persons* who have never been known to deceive. When nothing is known of the character or circumstances of a witness, the nature of a single testimony, and the coincidences of several, may be facts which can be accounted for only by reality and truth. Universal experience shows this connection, and no other.

3. Beliefs resulting from the experience of Natural connections belong to every department of knowledge, and the same Laws appear everywhere. Examples abound in the

which is found most frequently. Success is not always the result of industry, acquittal of innocence, honour of merit. According to the frequency of the connection of the consequent with one or another antecedent, one *cause* is more likely than another. Often there is something in the nature of the cause or the effect which makes one more probable than another, beyond what a particular experience would show; but this is known by general experience.

daily business and intercourse of life, in all arts and sciences, in all history and literature. A large portion of men's beliefs respecting all subjects come from the use or misuse of the lessons of Experience. The diverse judgments of men respecting the same objects often result from the different views which they have of these objects, according to the diversity of position, attention, and information. Very often a part of the object, or a part of the evidence, is taken as the whole, and what is inferred is mistaken for what is observed. But more frequently different judgments result from the different previous experience which is used, from the different class to which each particular object is referred. The judgment which is formed in any new case, is according to some cases before known, with which it is rightly or wrongly connected. The great superiority of the evidence which is supported by Science, over that which is simply Empirical, rests on the greater extent of the experience referred to. In the former there is a large experience, with which the small agrees; while in the latter the small experience stands alone.

4. Logical Inferences.

1. The primary Beliefs of Reason from natural connections are commonly combined with others. Many new Beliefs are gained by Comparisons, by reasoning in various ways from propositions already known to others which are inferred from them. When two objects are known to exist with a third, we infer that they coexist. When two have been seen to be like a third, we infer that they have some likeness. What is true of a class, is true of all contained in it: and so on. Axioms are general expressions for various inferences, which are self-evident in small, simple cases, and known to be true universally.

Formal Logic is always *certain*, but Applied Logic is generally more or less *uncertain*. Probability belongs to one

at least of the premises of most arguments, and therefore also to the conclusion. Remote inferences are especially liable to error from incorrect arguments. When conclusions are found to be wrong, it is not that the proper lessons of Experience prove to be false, but that they have been partially used, or wrongly applied, or that some illogical reasoning is added to the lessons of Experience. There must be the use of our own experience and the exercise of our own judgment, but there should also be the use of the experience and judgment of others. To some extent this is universal; for we can no more be independent of others in respect to knowledge, than in respect to food, clothing, and habitation. Mutual dependence is happily the condition of our existence and progress, our safety and welfare. The advancement of individuals and communities in wisdom and goodness, and prosperity of every kind, is never without some guidance, assistance, and encouragement from those who already are in some respects superior. But in one way or other there may and must be the exercise of every one's own judgment, as of one's own eyes and hands.

2. There is reasoning from *subjective* experience as well as from *objective*, and both are important. We find that we are right in some remembrances, judgments, calculations, inferences, in some acceptance or rejection of testimony and authority; and that in other cases we are wrong. Looking merely to this personal experience, we have beliefs respecting ourselves which confirm or correct those produced by outward objects. In regard to most objects of thought and belief, we are sometimes right and sometimes wrong. Where our conclusions have been always right, there is in this experience a confirmation both of the *constancy* of natural connections, and the *correctness* of our observations and reasonings. Where we have no sure experience of the correctness of similar judgments, we have less assurance that we are right. Some verifications of inference are requisite

in Mathematics and Pure Logic, as well as in all studies of Nature, in the practice of art, in the pursuits of literature and commerce. They who do not sometimes test their conclusions, can have no sufficient reason for self-confidence; but as we know that we *have been* right, so we have good reason to believe that we are and shall be. As it is respecting ourselves, so it is respecting the judgments of others, whether few or many. We trust others rather than ourselves in whatever they are supposed to be superior; and if we find that they are more frequently right, the supposition is true. We believe the competent few, if they agree, rather than the incompetent many; and we find that they deserve this confidence. But the many are to be believed rather than the few, when all are alike capable of judging.

3. Many Beliefs are strong and general, for which no *evidence* is at first seen. But what is generally and firmly believed by many, is never entirely without evidence, though it may be very incomplete and insufficient. The belief which properly belongs only to a few things is, by mere association, extended to others; and it is confirmed by connection with cherished feelings and customary practices, without any additional evidence. The faith of children in all they are taught is proper, if limited and temporary. More than this is not reasonable, and is soon corrected by experience. Superstitions are believed, partly because they are supported by a few facts, but principally because they are generally believed by others. Individual belief is often founded on common belief, and it is always strengthened by it. Where evidence is open to all, and considered by all, universal belief is the strongest confirmation of personal convictions. Its influence is always felt, even when not thought of. Coincident beliefs often give the surest evidence; and where it is not so, sympathy with the feelings of others promotes in many ways similarity of belief and conduct. Thus the same opinions are diffused in a community and transmitted from one gene-

ration to another, and remain unshaken till their foundation is questioned.

Common beliefs, if not supported by some proper evidence, though immovable for a time, sooner or later are easily subverted. Then as Truth and Error have stood together, so in many minds they fall together. Beliefs, general and enduring, are the *effects* of some evidence, and they are therefore themselves some *evidence* of some truth. Popular beliefs are never wholly either right or wrong. If the former belief of everything commonly taught was unreasonable, the present indiscriminating disbelief of many things is equally unreasonable. What is called the "spirit of the age," or the "mental atmosphere," is the prevailing tendency to believe or disbelieve, without a proper reason for either. Common belief and disbelief are good evidences for some things, but none for others. That part of the common belief which has no evidence, we should not believe because many believe; and that which has proper evidence we should hold fast, though it is cast away by many.

4. It may be asked, How do we know certainly that what has been will be? that the convictions of Experience are all true, and agree with realities? The reply is, that this is not known universally, it being true only within certain limits. There are some beliefs respecting natural objects which are always right, which have never been disproved, which have nothing against them, which are irresistible and universal; the absence of which would be proof of idiocy or insanity. Such beliefs are verified and confirmed by the experience of every day. Where the beliefs are less, they may be confirmed or corrected by stronger convictions of the same kind. No other confirmation is possible. As the beliefs of Memory can be established only by Memory, so those of Reason can be established only by Reason. Verifications serve to correct mistakes, and to confirm our primary beliefs. Some propositions are easily verified, while

the verification of others is impossible from their distance and magnitude. No proposition is to be rejected simply because it does not admit of separate verification, as some others do; for this would require the rejection of most inferences, of all that are of great extent. It is sufficient that a few are verified, and then all *similar* propositions are known to be correct, however they may differ in magnitude and in other respects apart from the reasons of inference.*

The welfare of all persons depends on their conduct being according to their constitution, and that of the objects around them in Nature and Society. Some knowledge of themselves, and their environment or surroundings, is therefore needed; and this is gained by Experience and Reason. The objects which most affect all men are frequently presented and have many similarities, so that some knowledge of them is easily obtained. It is not so easy to judge rightly of those which are rare, and unlike others; but these are generally of less importance, and always require more consideration. Most benefits may be obtained by the use of Experience, while they are lost by its neglect or misuse. In the same way most ills are avoided or incurred. But conclusions from Experience are seldom quite certain, and never absolutely universal. The extent and degree of knowledge are according to human wants and capacities. It is better for men that, while some things are known certainly, others are known with various degrees of probability. Uncertainty in some things is better than certainty, and ignorance than knowledge. Human welfare depends chiefly on the right use of what we have. Thus a *little* becomes *more*, and progress is sure.

* As what is very *improbable* does sometimes occur, the fulfilment of expectation is alone no proof that the belief was *reasonable*; nor does the failure of a *probable* expectation show that it was *unreasonable*. A prize may be drawn in a lottery, though the chances against it were a thousand to one. Success in such a case is no proof of wisdom.

CHAPTER II.

NATURAL LAWS, CAUSES, AND FORCES.

1. Natural Laws.

THE constancy of the Laws of Nature is now universally acknowledged. This belief is by some supposed to be a primary principle, not gradually learnt by experience, but originally fixed in our minds. Some connections of co-existence and of sequence are *constant*, while others are *variable;* and Experience, it is said, is needed only that we may distinguish the latter from the former. But this supposed original principle is a conjecture with little, if any, evidence or use. Experience shows that some natural connections are *constant*, as well as that others are *variable;* and human intelligence always begins with particular knowledge, not with universal. The primary conviction that *all* natural connections are constant, would be false; and that *some* are constant would be useless, till we knew which were so. Experience shows what connections are constant and what are variable, and thus it gives the knowledge we require. When the Laws of Nature are defined as the *constant* connections, the statement that *all* are constant is a mere truism; for they would not be Laws if they were not constant. The supposed principle has been generally held only when a large knowledge of nature has shown that there is perfect regularity, with much apparent irregularity. In former ages it was commonly believed that the operations of Nature were not always regular; and the present convic-

tion of educated persons is due chiefly to the discoveries of modern science, and to the more correct ways of thinking which led to them and have been promoted by them.*

The Laws of Nature, as before observed, are ascertained facts, constant coexistences and sequences; and the general verbal statement of such facts is also called a Law. That nothwithstanding the infinite variety of Nature, and many apparent irregularities, there are Laws which never change, is a conclusion not only commended by its simplicity and grandeur, but established in innumerable instances by the most exact and extensive observations and experiments. The perfect regularity in the movements of the heavenly bodies, is the most striking and impressive evidence of the stedfastness of Nature. Eclipses of the sun and moon, the real position of planets, and the apparent places of stars, are predicted with the utmost precision and certainty. To a great extent the same perfect regularity is to be found in all natural changes, and apparent anomalies, exceptions and irregularities, disappear with the progress of knowledge. By observing the Laws of Nature men obtain the use of all natural objects, and the mightiest agencies become their obedient servants. All improvements in agriculture and manufactures, all the comforts and conveniences of civilized life, all the wonders of art and science, depend on our knowing the Laws of Nature and acting in accordance with

* In this matter Religion appears to have anticipated Science. The earliest assertion of the universality and permanence of Natural Laws is found in the Bible. No modern philosopher has declared the steadfastness and regularity of Nature more plainly than the Hebrew psalmist; but he referred this constancy to a Supreme Will, and connected it with the unchangeableness and faithfulness of God.

> "For ever, O Lord, Thy word is settled in the heavens;
> Thy faithfulness is unto all generations.
> Thou hast established the earth, and it abideth;
> They continue this day according to Thy ordinances:
> For all are Thy servants." (Ps. cxix. 89–91.)

them. But Laws are not Causes; they are simply the manner in which objects exist and are changed. They explain nothing, account for nothing, except as generalisations may be said to account for any particular fact.*

2. Natural Causes.

1. These, as the term is commonly understood, are among the most constant of the connections found in Nature. That some natural antecedents are Causes, and by this name are distinguished from others, is admitted by all, though there has been much difference of opinion respecting the meaning of *natural causation.* All regard the rising of the sun as the *cause* of daylight, the reception of food as the *cause* of the continuance of life, the stroke of a bat as the *cause* of the motion of a ball, human purpose and effort as the *cause* of some changes in body and in mind. But though the connection is equally constant, no one considers day to be the *cause* of night, or night the *cause* of day; autumn to be the *cause* of winter, or winter the *cause* of spring; the fall of the barometer to be the *cause* of the change of weather which follows; the flight of birds to be the *cause* of the subsequent seasons. These and many other antecedents are *signs* of what will be, but they are never supposed to be *causes.* They *precede,* but they do not *produce.* Natural Causes are supposed, rightly or wrongly, to have some productive *power,* which at least partially accounts for their effects. As it has been said that Reason teaches there are Natural Laws, and Experience shows what they are, so it has been said that Reason teaches there are Natural Causes,

* The dependence of Knowledge on experience, and of useful action on knowledge, are declared in the oft-quoted aphorism of Lord Bacon: "Man, the minister and interpreter of Nature, only effects and understands so much as he has observed, really or mentally, of the order of Nature; nor beyond has he either knowledge or power." (*Nov. Org.* aph. 1.)

and Experience shows what they are. But the statements made in reference to the former supposed principle will apply also to the latter. Natural Causes are known only from Experience, as their Effects are; and they are known by the exercise of Reason, as Natural Laws are. That *all* antecedents are *causes* would be false; that *some* are would be useless, unless we knew which were and which were not. Experience shows that there are antecedents, from which, unless opposed, certain consequents may always be expected, and others from which they do not thus follow; and some of the former are regarded as Causes. Natural causes always have their effects unless counteracted, and a *power* is attributed to them which tends to produce the effect, though this may be prevented by opposing power. Experience shows what is natural and constant. If Causes are defined as the constant antecedents, and Effects as the constant consequents, then every natural cause *must* have its effect, and every effect *must* have its cause. But this necessity is simply logical, and the propositions are truisms showing only the meaning of words. That there are really such antecedents and consequents can be known only by Experience.

2. Many errors have come from the confusion of *physical* causation with *metaphysical.* It has been said of *natural causes* that they are *necessary;* that they must *contain* all that appears in their effects; that they must be *close* to their effects, both in time and place; and that these causes and effects must *vary* in like manner. But no *necessary* connection has ever been discovered between natural causes and effects. Many combinations exhibit what cannot be supposed in any way to pre-exist in their elements. All cases of attraction are examples of causes distant from effects; and very often the increase of the cause produces a contrary effect. A little heat is beneficial when much is destructive; a little medicine may be salutary and more be poisonous.

Evidently these axioms do not belong to what are usually called *natural causes*, and they are not supposed to be the lessons of Experience.

3. That every *natural change* has an antecedent from which it may be inferred, is a lesson of the largest experience; but not that there is only one such antecedent, nor that any one is alone sufficient. There may be a *plurality* of natural causes, this being quite common; and for every natural *cause* there are *conditions*, without which the cause would be ineffectual. The nature of that which is *changed* by any cause is as requisite to the change, as the nature of that which *causes* the change. The definition of a Natural Cause now given is: "The sum of the antecedents which, with only negative conditions, has always certain consequents." (Mill's *Logic.*) This definition *includes* more than can be known by experience and memory; for the *future* is an inference of reason, and all *universal* propositions exceed experience. But it *excludes* all reference to the *power*, which is equally an inference of reason. It gives the meaning of Cause as used by the scientific few, but not as it is used by men in general at any time or in any country. They mean more than constant antecedents. In all languages there are words which express more, forms that distinguish the *active* from the *passive*, special names for *power* and productive *causes*. They who deny theoretically all natural causation, are obliged to use inconsistently the terms in which it is implied.*

* When by the *largest* possible experience it is surely known that some natural connections are *constant*, a few observations may show that others are equally so. It is known certainly that there are natural *causes*, which always have their *effects* unless counteracted. Therefore a small experience will show, that *one* of several antecedents is the cause of *one* of several consequents. By the methods of Agreement, Difference, Concomitant variations, and Residues, a very limited experience suffices to establish the largest conclusions; but only through the prior

3. Natural Powers.

1. Though no *necessary* connection can be found in any natural antecedents and consequents, some *power*, active or latent, is almost universally believed to belong to Natural Causes. Reason teaches that *substances* continue when they are no longer seen, and also that *powers* remain when they do not act. The continuance of ourselves as agents is known also by Memory; and thus we have the earliest and surest knowledge of something, which is the *one* cause of *many* effects, and which *continues* in existence when it *ceases* to act. We are *conscious* of successive *actions*, when we lift our arms again and again; and we *believe* that the same *power* produces many *actions*, and does not cease to be when it ceases to produce. From what is transient we infer something permanent, a *nature* corresponding to appearances and actions. We know that we have the *power* to do what we have done, the *capacity* to see as we have seen, hear as we have heard, feel as we have felt. There is not merely the expectation of future similar states, but there is the belief of some *present power;* and the future conscious states are generally expected, because a present power is believed to exist.

2. Our first idea of Power comes with the consciousness of Will, but not from that of a single mental or muscular effort. We choose motion, and also its direction, its dura-

knowledge of Natural Laws and Causes. Things may be constantly connected, as *effects* of the same *cause;* and when the sequence is not obvious, an *effect* may be mistaken for a *cause*, and *vice versâ*. The methods for the discovery of Natural Causes, are fully stated in Mill's *Logic*. To this work every later writer must be under great obligations, in all that belongs to Formal Logic and Natural Science. The nature of natural causation being unknown, all inferences respecting it rest entirely on the *constancy* of the connection. We reason from and to *natural causes*, only as *conditions*—constant but not *causal* antecedents.

tion, its extent, its quickness or slowness, its regularity or irregularity. Power is attributed to volition, because in all these many different things the bodily change fully *agrees* with the mental choice, and is *accounted* for by it. As the choice is repeated so are its consequences. Therefore something is inferred respecting the Will, the Mind or Soul. Varied and repeated antecedence and correspondence are shown in that of which we are conscious; and therefore a Power is inferred which accounts for all observed changes.* It is the same when *choice* respects *mental* changes. The *agreement* of mental and muscular effort with consequent changes is *shown* to us in our own experience, and something like this *agreement* is *supposed* whenever a natural antecedent is regarded as a Cause, having *power* to produce the consequent. The mental and muscular effort, which are states of consciousness, are inferred only of other human beings; but some *correspondence* to effects is attributed to all natural *causes*, a correspondence which will account for their effects, as the preceding choice, with its many various and exact agreements, accounts for bodily and mental changes. Fire is supposed to have some *power*, to account for the various effects it produces; and plants and animals some *power*, sufficient to account for their growth and action. As natural *effects* are different, so are the *powers* to which they are attributed. No natural causes are supposed

* Power of every kind is always something *inferred*. When one *power* is sufficient to account for many effects and appearances, there can be no proof of more than one. The supposition of *more* is unreasonable, because it introduces without evidence needless plurality and complexity. Several actions of *several* powers may be *possible*, as well as several actions of the *same* power; but nothing is to be *believed* simply because it is possible.

The *power* attributed to natural *causes* is inferred from their *effects*; and the *effect* is necessarily connected with its supposed *action*. But this *necessity* is simply logical. The *subject* includes the *predicate*, which is deduced necessarily.

to be *unconditional;* for all alike are limited, and depend on what is beyond them, but they appear as the chief requisites to the effects which follow.

3. It has been thought by some that the simple experience of human *effort* is the sole ground of all belief in natural causation; but this experience is easily shown to be insufficient. If we had a direct knowledge of all *human* efforts, it would not be reasonable to infer that all *natural* powers were like them. But we know directly only our *own will*, and from this *single* experience to conclude that *all* natural powers are like the *one* of which we are conscious, would be most unnatural as well as unreasonable. Volition is an act of conscious Intelligence, and this one kind of Power is inferred from the peculiar effects which require Intelligence. All changes require the action of some Power, but only those which have the marks of intelligence can show a conscious Intelligent Power. The muscular Force attributed to the human Will cannot be a *necessary* cause; for it is not always effectual. Nor is it known to be a *direct* cause; for the power shown in muscular movement seems rather to belong to the latent energy of the Nervous system. Volition sets this free and directs its course, it may be as the finger of an engineer releases the steam by which the largest vessels are propelled. Muscular contractions are often involuntary, and they can be produced by electricity. The power of Volition on body and on mind is lessened with the loss of nervous energy, and restored by rest and food. Therefore it seems that little direct power belongs to the Will, though its indirect influence is immeasurably great.

4. Matter appears to possess some power, and so does Mind. Material powers are known by their effects, and so are mental and moral powers. Their nature and their laws are different. Material powers will *account* for many material

motions, and for many bodily sensations, but not for all of these. Still less can they be the *causes* of mental and moral changes—for the birth and growth of intelligence, the excitement of affection, the formation of character. The power of Truth, of Love, of Goodness, is as real as any mechanical power, and cannot be attributed to material causes. Where some *correspondence* is seen between antecedents and consequents, however far removed, the former are considered to be *causes* of the latter. But where no *correspondence* is seen or supposed, however close the connection, no *causation* is thought of. The spiritual power of one mind on another is as real and certain, as the material power of one body on another. The influence of Mind on Mind requires no local proximity, no material magnitude, no corresponding mechanical force. It is not lessened by communication, nor by any distance of time. Spiritual power is the same after the lapse of ages, and it is the same for millions as for one. The greatest effects produced on human beings come from mental and moral causes. The knowledge and the faith of one, are the causes of the knowledge and faith of others. The love and the joy of one, are the causes of the love and joy of others. The courage and the goodness of one, are the causes of the courage and goodness of many. Spiritual causes produce spiritual effects. They are not independent of *material* objects, but these are merely the *signs* requisite for knowledge, and add nothing of moral influence and power. No antecedents are considered to be Causes, unless they have some productive *power*, some *correspondence* which at least partially *accounts* for the consequents; being a *reason* for *existence*, as well as for *expectation*; and all such antecedents are Natural Causes.*

* The theory of Evolution is like that of Gravitation, in simplicity and grandeur; but it is not like in evidence, being supported chiefly by analogies. It states a supposed *mode* of production for all living beings, but says nothing of any adequate Power. As applied to the changes of

one *species* of animals into another, or of plants into animals, or of lifeless into living bodies, it is confessedly without any scientific proof, resting wholly on Analogy. The growth of a plant from the seed, and of an animal from the embryo, show plainly that Evolution is one of the Laws of Nature, but not that it is universal. That some changes come by accident, and are transmitted by heredity, can be no proof that all animal organs and faculties are thus produced. The first and lowest of a series of objects cannot be regarded as the Cause of the higher which follow. No *power* can be supposed to belong to the seed and embryo *sufficient* to account for the full-grown plant and animal, still less for the series of like plants and animals which follow, and still less for the faculties and affections of human beings. Nothing can be more contrary to Experience than the supposition, that this world and its inhabitants, with all their intelligence and enjoyment, might be produced simply by the motion and combination of senseless, lifeless atoms. Instead of the blind concurrence of countless objects, with purposeless differentiation and integration, it is more reasonable to believe that there is One, who wisely chooses to produce an endless variety of objects in orderly progression, ever maintaining a unity of purpose and plan, and bringing what is imperfect gradually to perfection. So far as Evolution is proved or probable, there is no opposition between Science and Scripture. Both declare the regularity of Nature, the preservation of what is old, the formation of what is new, the progress of all things, the lower being preparatory to the higher. Astronomy and Geology have corrected some misinterpretations of Scripture, and led to higher and better views of religious truth, and so will Evolution. It adds to the manifestations of Divine Wisdom, and takes nothing from the evidence of a Creating and controlling Agent.

The persistence of Matter and of Force will account for a few things, but many more are left unexplained which equally require to be accounted for. Order, fitness, use and beauty, progressive life, intelligence, enjoyment and goodness, are facts unaccounted for. Resemblances are not Causes, any more than Laws are. No unintelligent Power can account for the structure of a single organization, and its relations to other objects; much less for the union of countless objects, similar and dissimilar, with perfect adaptations, mutual dependencies, and subservience to ends only partially understood by the wisest and best. Evolution imperfectly answers the question, How were things made? It gives no reply to the other questions, By what Power? and for what purposes?

CHAPTER III.

INTELLIGENT CAUSES.

1. CAUSES of this description can be known only from Experience, and they are learnt in two ways. There may be merely an observation of the constant connection of *antecedents* and *consequents*, without any regard to their nature; or there may be a consideration of the nature of the *effect*, by which that of the *cause* is in some degree shown. Experience is necessary for both modes of inference, and is used in both; but not in the same manner. Some *antecedents* are deemed to be *causes*, only from their *constant* connection with certain changes; but others show a *nature* which in some degree accounts for the effects produced. These follow according to a larger experience, which has a surer evidence. Some *actions* are attributed to *purpose*, simply because similar actions had this origin; but others are referred to this principle, because of their form and structure, use and advantage. They are not merely such as some agent has often produced, but they are such as human intelligence is fit to produce, and has produced in innumerable instances. We are much more sure that any work has been *chosen*, if we see it to be *reasonable;* than if there is the *constant* connection of purpose and action, without any apparent reason.

2. Intelligent Causes are sometimes inferred *entirely* on the ground of observed connections. No purpose is known

or supposed, and the inference is simply according to actual experience. All inferences of intelligence are *partially* produced in the same way; but the strength of most beliefs of intelligence is according to the *nature* of the effect produced, and not according to the number of *instances* previously known. The structure of a watch, and the furniture of a room, are attributed to intelligence, chiefly because of the multiplicity of their parts and their manifest uses, and not from any large experience of watchmakers and carpenters.* Order, and the Adaptation of means to ends, are *signs* of intelligence immediately recognized. Houses and pictures and books show at once the action of Mind, though there has been no previous experience of builders, artists, and authors. The mode of producing such works may be entirely unknown, and parts may seem to be without any use or meaning; yet an *intelligent* cause is surely known from the *nature* of the effects. The inferences are sure, according to the number of objects seen in orderly arrangement, and the number of different things that in combination secure the results which Intelligence would choose. Their separate existence, nature and laws have nothing to do with their *arrangement* and *collocation.* Experience shows that such

* A *timepiece* is seldom attributed to *purpose*, merely because of the purposes known to have produced similar works. The *belief* is not more or less, according to the extent of such experience. It is increased, and not decreased, by difference; if there be a greater number of parts and a greater excellence in the whole. One who had only known human intelligence to be the cause of wooden clocks, would not therefore think that perfect chronometers might come from an inferior cause,—from a lower intelligence, or from a force without intelligence, with no purpose. Larger works require and manifest greater power; and works more complicated and complete require and manifest superior intelligence. Every tool and machine, every picture and writing, is at once attributed to purpose because of its nature; and even pieces of flint in the shape of instruments are declared sufficient proofs of intelligence.

effects often result from intelligent causes; and when there is much regularity and complexity, it is not known that they ever come from causes without any preceding or concurrent intelligent action. Purposes account for such effects, while nothing else can; and therefore they are attributed to Intelligence. Mind arranges, selects, combines, adapts means to foreseen results; and no other cause is known to produce such effects. If we would imitate any works, we must know *how* they were made; but when nothing is known of the *way* in which they were produced, many works plainly show intelligent causes. The signs of Intelligence are not less sure and significant, because the objects are greater and more excellent than those previously known; and what is surely inferred of one, is with the same certainty inferred universally—of all that are similar in *order* and *adaptation*, however unlike in other respects.

3. General experience often supplies a ground for inference more complete and sure than any particular experience, and enables us to anticipate observations and experiments. We need not turn a tee-to-tum many hundred times to learn how often one side will come up three times in succession. It is certain that, if it be regular in form and weight, this will happen only once in two hundred cases; while if not regular, it will occur frequently. Everyone is sure that a die is loaded, if the same number appears very often. No one would believe that the arrangement of books was accidental, if ten or twenty were found in exact order. No experiments are requisite for the conviction that the greater the number, the greater the improbability of order being accidental. The increase of numbers soon makes an appeal to actual experience impossible, and at the same time needless. If twenty books would not be in *order* without *design*, no proof is needed that accident could not produce order in two

hundred or two thousand. The *event* is not impossible, but the *belief* is.*

4. Mental purposes and Material forces are known in the same way, indirectly by inference. Mechanical force is never seen, and is known only by the movement of bodies. Chemical and vital forces are never seen, but are inferred from the changes they produce. In like manner Purposes, with the single exception of one's own, can never be directly perceived; but they are inferred with as much certainty as any material force. That intelligent causes are to be inferred from the *nature* of their effects, is evident from the knowledge we have of the *minds* of others. We know *directly* only our own intelligence. The thoughts, affections, purposes of others are known *inferentially*, from their movements and works. The consciousness of a single person, as a simple fact, could not produce the belief of a similar consciousness in many millions. It is because they present *signs* of intelligence that this is believed; and their movements and works are *signs* of intelligence, because they are of such a kind, that they would come from this cause a thousand times more frequently than from any other. It is conceivable that all the movements and works of men are without intelligence, the simple product of purposeless material forces; but no one believes this. The experience of each individual is very small, but it suffices for the *inter-*

* The calculation of chances merely makes definite the conclusions of common-sense. The probability of six books being arranged in any given order by mere chance is, according to the number of possible combinations, 1 out of 720; and as there are only two complete orderly arrangements, the probability of either being accidental is 1 out of 360. What *chance* would produce in one case, *design* would produce in all. As the numbers increase, the improbability increases rapidly; so that it is impossible to express the improbability of the accidental origin of orderly and useful combinations, when there are many separate and different objects.

pretation of the signs of human intelligence; and thus the vast and varied intelligence of Mankind is known by us, not less surely than our own. No one seeks proof that with the *bodies* of others there are unseen *minds;* that useful machines and intelligible sentences are mental products. Any real doubt would be evidence of insanity.

5. When we consider the mighty Forces constantly acting in Nature, we cannot but inquire, if the effects produced do manifest Intelligence as well as Power. All know certainly that their bodies are not the only material existences, nor their souls the only spiritual. They are conscious of intelligence in themselves, and are equally sure that there is intelligence in millions of men. Are not signs of Intelligence to be seen everywhere in Nature? We know not the use and meaning of many things; but in others the marks of purpose, the signs of intelligence, are manifest. All the limbs and organs of the body are most curiously constructed of different substances, with a definite size, form, and position; so arranged that they serve manifold uses, and contribute to the growth and preservation of the whole body. In all plants and animals the appearance of purpose is so constant, that naturalists now assume that every part of an organism has its *use*, however useless it may seem. But *use*, when seen in complex structures and coincident actions, is the *sign* of purpose and intelligence. Therefore we know that eyes were made to see, ears to hear, hands to work, feet to walk. The fitness of the means, and the desirableness of the end, show the purpose of some agent. All human beings find innumerable objects which, by coming together, supply their wants, contribute to their happiness, minister to their welfare. It is conceivable, but not credible, that all this provision should be made without *design*, by the concurrent movement of senseless atoms. Every part of the world shows innumerable adaptations and uses, the

same forces and laws, regularity in all things, resemblances and mutual dependencies. Life is everywhere, and some provision for enjoyment, according to the capacities of innumerable living beings. That all creatures have one Cause, that the many forces of Nature belong to one Power, and that this Power is perfect in wisdom, benevolence, and rectitude, cannot be known without much information and reflection. But that there is Intelligence as well as Power in Nature—both alike surpassing all measurement and comprehension—may be known universally. This Truth is shown in all the ways in which it can be made known. The operations of an Intelligence so vast and comprehensive can be but partially understood by men. Therefore there must be many things in which no purpose and wisdom can be seen, because the purpose is beyond and above our thought, the wisdom higher and better than human wisdom.

6. Mind itself in its birth and growth, and in every exercise of intelligence, is the best evidence of Intelligence as well as Power in its Cause: and all that it beholds gives the same testimony. The fitness, use, and beauty which human intelligence discerns in natural objects, and which give a mental delight superior to any sensitive gratification, must surely come from Intelligence. The minds of men recognize this in Nature and respond to it, as the mind of a reader responds to the mind of the writer. If it is unreasonable to suppose that a few sentences in a book, a few lines in a picture, were produced without intelligence and purpose, it cannot be reasonable to suppose that all the admirable and wonderful works of Nature come without Mind. "What can be more true, than that no one should be so foolishly arrogant as to think that mind and reason are in himself, but not think any in the sky and the system of the world. Or think that those things, which the highest genius and reason comprehend with difficulty, should be

moved by no Reason." A heathen philosopher long ago thus spoke the common-sense of mankind.

7. Intelligence is inferred from the constitution and changes of *material* objects, and with the same certainty it is inferred from those which are *spiritual.* Experience does not show that *minds* are thus produced, nor does it show that they are ever produced by unintelligent causes. But experience does show that all causes correspond to their effects, and therefore it is contrary to experience to suppose that human minds, with intelligence and affection and choice, are produced by material atoms that have none. Everyone is quite sure of the comparatively recent origin of all the mental and spiritual capacities now possessed. We cannot believe that they came out of nothing, or that a lower form of existence could of itself produce a higher. Both suppositions are equally unreasonable. As we know that the organs of our bodies were fashioned by a Power that could make them fit for their several uses, so we know that the capacities of our minds were given by One, who is able to produce intelligence, wisdom, and goodness, because Intelligent, Wise, and Good. Human minds are the plainest proofs of the Divine Mind. The intelligence which can understand the works of Nature, and discern their order and harmony, finds in itself the evidence of the Intelligence which is before and behind all. The reason which apprehends what is infinite and unchangeable, is itself a testimony to the Supreme Reason. The delight in whatever is True and Beautiful and Good, and the desire for them, are some proof that they exist in the Spirit who is the Father of spirits; some promise of progress towards a similar perfection. The love which is the spring of the highest and most constant activity, the fountain of the purest and most permanent happiness, is the best sign of the Love which is the source of all human affections, of

which they are but the stream and the reflection. The human spirit is a revelation of the Divine Spirit. The consciences of men show the moral character of their Maker. They testify to the duties of men, and to the purposes of God. Moral goodness has an excellence and usefulness, a permanence and progressiveness, to which nothing else can pretend; and therefore this is regarded as the Final Cause of all things.

8. The studies of many are directed chiefly to the *processes* of Nature, and the *products* are less regarded. Things covered over, and requiring microscopes, are very curious and admirable; but not more so than those which are open and obvious, requiring only eyes to see and minds to understand. The latter are of the greatest importance; they are known most surely, and are intelligible to all. From the *products* of human effort the purposes of men are best known, their ability and character; not from the *processes* through which their works are produced. The knowledge of the latter is chiefly for those who would imitate the works; that of the former is for all. Human affections—admiration, gratitude, trust—are awakened generally by the consideration of *what* is done, and not by a knowledge of the way. It is the same with religious knowledge and affection. When it is not known *how* a thing is done, it may be quite clear *who* did it. What is done in the works of Nature is open to the view of all; but how it is done can be known by few, and very imperfectly by any. It is from the *products* of Nature, and not from its *processes*, that we learn most of the power and wisdom and goodness of God; and these are most evident in His highest works. From the character and conduct of the best human beings, we gain the highest Divine knowledge. The power and wisdom, love and justice, attributed to men and to God, are alike; they are known by the same signs, and have similar effects; they are

equally real, though the Divine is immeasurably superior to the human.*

The Mosaic account of the Creation, however interpreted, is evidently designed to set forth the fundamental truths of Religion. This highest intention is manifest, and no other appears. Moral and religious instruction for all ages may be given in the form of a parable, or allegory, more simply and profitably, than in statements strictly historical or scientific. The first chapter of the Bible declares that there is One who was before all, and is above all; and shows the greatness of His power, wisdom, and goodness. He spoke and it was done. His works were orderly, progressive and good, the lower a preparation for the higher, and all things subservient to Man. These are the lessons which all Nature teaches. To do anything merely because it has been done—to act without purpose—is deemed unworthy of men, and should not be supposed of God. Means

* Bacon objected to Final Causes, only when used for the *discovery* of natural causes. Certainly we should not believe that a supposed *cause* is real, because it seems to us the best *means* to be used; or that a supposed *effect* is real, because it seems to us a desirable *end*. For such uses the doctrine of Final Causes is fruitless and vain. But Bacon was as far as possible from rejecting Final Causes, when the natural cause and effect are known, and the fitness of the one to the other is evident. The study of human purposes will not show the works of men, and how they are done; but when human works are known, human purposes are known, and also the intentions and character of men. So the study of Final Causes or purposes in Nature, will never show natural causes and effects; but though barren in respect to a lower utility, it yields the most precious fruit in the highest Knowledge.

Positivism teaches that the common bad effect of familiarity, inconsideration or partial consideration, should be preserved as the highest wisdom. Observe sensible objects and their connections, but never inquire for unseen causes or reasons. So it might be said to a reader, Look to the shape and size of the letters, the colour and texture of the paper; but do not seek for any meaning or purpose in words and sentences. If one direction would be unreasonable, how can the other be reasonable?

are not necessary for any Divine work, but they are very useful for human instruction. Moral progress is the highest and best end we are able to imagine, and Trust in God secures this most certainly and completely. We cannot now see that all things made and done by Him "are very good," but we may well believe that they are so; and that this will be evident more and more, as the thoughts of men become more like the thoughts of God, and their ways as His ways.*

* As in all human works—tools, machines, houses, furniture, ships, bridges, pictures, books—we pass at once from the *works* to the *mind* of the maker, so it is with the works of Nature. In neither is the knowledge of what is intermediate requisite. We may not know whether the author is near or far off, whether his action has been direct or indirect, whether the means used were conscious agents or unconscious. It is enough that *signs* of intelligence appear in the works; that the *products* are known, though the *processes* are unknown. Then, according to the manifest principal effects, we know the intention, ability, and character of the author. The inferences are equally direct and certain, whether the works are few or many, little or great, human or divine. Beliefs are strong and sure; not according to any remembrances or former associations, but according to the present perception of use and meaning, and the known nature and effects of Intelligence.

DIVISION IV.

BELIEFS OF REASON. NECESSARY CONNECTIONS.

CHAPTER I.

NECESSARY AND CONTINGENT TRUTHS.

THE difference between *necessary* and *contingent* truths has been always recognized by the common-sense of mankind, and it has been maintained by the reflective intelligence of the highest philosophers as both real and important. It has been denied by a few in ancient and modern times, who have held that we cannot say of anything, "It *must* be thus, and could not be otherwise;" but only, "We find it *to be* thus, though it might be different." Clearly to understand the subject, and to judge rightly respecting it, we should recall the admitted characteristics of all Beliefs respecting merely *natural* connections. They are the following:

1. In these no *reason* is perceived for the connection; it is simply known as a fact. Nothing is perceived in the *antecedent* to account for the *consequent*, and the latter cannot be *deduced* from the former. What is learnt by experience of the consequent may be put into the *conception* of the antecedent, and then deduced as a *logical* consequent, as with the idea of Force; but from the antecedent, as known by itself, the consequent cannot be inferred, nor in most cases

even conjectured. The motion of one ball is like that of another against which it goes; the form and colour of a flower are repeated in that which comes from its seed; and the structure and plumage of the parent bird reappear in its offspring; but these are known only as natural laws. It is sometimes said that a fact is *accounted* for when shown to agree with a class of facts, as the horns of a cow are explained by the common nature of such animals; but no *reason* is thus given. If we need to *account* for a fact in one case, there is the same need to account for it in a million. Generalizations in science are of the highest value, but they show no *reason*, and account for nothing. When anything is *common* it ceases to awaken curiosity, to prompt to reflection; but the classes of objects need to be accounted for as much as single objects. In merely natural connections, the closest observation and reflection can never discover in the antecedent any adequate *reason* for the consequent.

2. The strongest convictions respecting natural connections are only *conditional.* We believe that things will be according to experience, *unless* there should be some cause of change. The sun will rise and set, the seasons will return, men will be born and die, *unless* there should be a change in the course of Nature; and apart from this supposition our convictions are only conditional. Bodies will fall to the earth, *unless* there is some power to prevent their falling; fire will burn, *unless* there is some counteracting cause; men will act according to certain motives, *unless* there are other inducements. Our knowledge of Nature is never more than partial; and therefore our strongest convictions are subject to the *condition*, that all is known that need be known. Without any change in the course of Nature, but simply through a larger and better knowledge, we should have convictions very different from those we now have.

3. Our convictions respecting natural connections are always *according* to Experience. They are strong, if our experience is large; feeble, if it be small or variable. There are no firm beliefs, respecting one object or many, which are not referable to a proportionate experience. Nor are there any that do not diminish, as they are extended to objects remote in time and place. That our *beliefs* respecting Nature do thus increase, and decrease, is both natural and reasonable. If it were otherwise, the laws of Belief would not agree with the Laws of Nature; and there could be no useful knowledge of ourselves, or other men, or of the world. But being what they are, the knowledge of Nature is attainable, according to the wants and welfare of mankind.

4. However strong our *convictions* respecting natural objects, we can form different and even contrary *conceptions*, often without any difficulty. We can *think* of the sun rising in the west, as readily as of its rising in the east; of men walking on the water, as well as of their swimming in it; of their living without food, or with it; standing inside a burning furnace, or outside. The nature of objects must be changed, but this change is easily supposed. Whether such things are true or false, possible or impossible, according to experience or contrary, there is not the slightest difficulty in supposing them, thinking of them. Fables are as easily thought of as facts; what is imaginary as what is real. We have the strongest convictions of the constancy and universality of many natural connections, and notwithstanding we can form contrary conceptions clear and complete. It is so with all *natural* connections.

But there are other objects respecting which our convictions have none of these characteristics. There is an evident *reason* in one for what is believed of another; the belief is *unconditional;* it has no *proportion* to experience; and the objects are such that it is quite impossible to *think* of them,

as being other than they are perceived to be. A *necessity* is seen or believed in each single case; and if it did not appear in one, it could not in many.

Necessity is not asserted simply because we cannot think of what is *different* from experience, but because of a self-evident *contrariety*. One born blind cannot think of colour; but there is nothing in the supposition *contrary* to his experience, it is merely *beyond* this. But that things equal to one and the same thing are not equal to one another, is *contrary* to what is perceived. If this were possible in any other case, it would be possible in the case which is present to the mind. But it is perceived to be *impossible*, as impossible as that the same thing should be and not be; or the same proposition be both true and false. That which in one case is seen to be *contradictory*, cannot be believed; it is *necessary;* and what is *necessary* in a single case, is equally so in all *similar* cases.

Mathematical Sciences, Metaphysics, and Formal Logic show innumerable examples of Necessary Truths. Before considering these we shall briefly notice the chief reasons for denying their peculiar nature, their necessity.

They are denied on two grounds: (1) It is said that many supposed *necessary* truths have been disproved; (2) That *experience* alone is sufficient to account for the semblance of necessity.

I. That some *supposed* necessary truths have been shown not to be such, is quite true; but this can be no proof that none are *really* necessary. Objects may be real, and yet to some inconceivable. Those who have not *seen* colour can never *think* of colour; but this impossibility, arising from a deficiency in the observer, is entirely different from the impossibility of thinking that two and two make five. Often by the impossibility of *thinking*, nothing more is meant than the impossibility of *believing*. It was said to be *inconceivable*

that there should be men living at the antipodes, but the statement only meant that it was *incredible.* When flies were seen to walk on the ceiling as well as on the floor of a room, there could be no difficulty in *thinking* of men living on the other side of the globe. When *conceptions* of a natural antecedent have been formed to include the consequent, this becomes *necessary*, logically so; but when the *conception* is changed, and contains only what is found in the antecedent, there is no longer this necessity. That the first law of Motion has been supposed to be *necessary*, is evidently the result of the definition of Force. All experience and associations are against it, and the necessity is merely Logical. In other cases the *known* antecedent, the *natural cause*, has been confounded with the *inferred* antecedent of metaphysical Causation, and what is true only of the latter has been attributed to the former. There is nothing in the rejection of such supposed necessary truths to justify the denial of all necessary truths, of those whose character is quite different.

II. The supposed sufficiency of invariable experience to produce all apparent *necessity*, is contrary to experience. Necessity is found where there has been no large experience, and it is not found where there has been the largest and the most constant. Single experiences of the smallest numbers and figures lead at once to universal conclusions. No experience is larger than that of the ascending and descending sun, the succession of day and night; but nothing is easier than to think of the sun standing still, and the day remaining alone. Our experience of *body* is as large as our experience of *space*, but we have no conviction of the infinity of the former as we have of the latter.* Our experi-

* Our experience of the boundaries of *body* belongs only to what is *visible*, and there is no experience of the limitation of what is invisible. From childhood the boundless unseen air is known to encompass all tangible objects. Moreover the limitation of visible objects is merely a mental separation of some from others.

ence of the truths of Mathematics is not larger than our experience of the truths of Natural Science, but our convictions are very different. It was once held that *individual* experience might cause the appearance of *necessity*, but this position is now forsaken. The *race* is put for the individual, and countless *ages* for the brief period of human life; and it is said that thus *constancy* is changed into *necessity*.

But what a limited experience has no tendency to do, could not be done by an unlimited. That some acquired habits and properties become in some animals instinctive and hereditary, can be no proof that the highest exercises of human intelligence are a deceptive growth, produced by slow changes in ten thousand generations. Moreover, present experience shows something of *objects*, as well as of ourselves; and if men's minds may change, the *objects* known do not change with them. That what we learn by observation and reflection is merely, that objects *seem so to us*, is true of dreams and the visions of insanity; but not of what we learn when we are awake, and use all our senses, and find that all others see and believe as we do. To believe that the transmitted influence of many past generations, is the cause of our believing that two and two *must* make four, exceeds the credulity of the most superstitious. With full certainty we know that we have minds and bodies, and many of their properties and changes are surely known. Present consciousness gives both the *natural* connections already noticed, and the *necessary*, which we have next to consider. The Abstract as well as the Natural Sciences depend on Experience, but not in the same way.

CHAPTER II.

MATHEMATICAL CONVICTIONS.

1. Arithmetic.

CONVICTIONS respecting Number are among the earliest and the most common, and they have none of the four characteristics of those which belong to Natural connections. In all some *reason* is perceived; the inference is *unconditional;* it has no *proportion* to experience; and the contrary is impossible in *thought*, as well as in *belief*. If we take a small number of lines or dots, and then another small number of similar objects, we perceive that the wholes may be divided into parts, and that each whole is equal to all its parts. Thus $7 = 4 + 3$ and $5 = 3 + 2$. Now if the two wholes are added together, we find that their *sum* is equal to that of all the parts. This appears when the two sums are reckoned, but it might be known before. In the first equality there is a *reason* for the second, and the second may be inferred from the first. It is inferred *unconditionally*. It matters not what the things numbered may be. What is true of lines and dots is known to be true of men and stars; what is true in one place and time is true in all. The property of numbers is perceived to be such, that no power can make it otherwise. This property belongs to the *numbers*, not to the mind considering them. The inference is *universal* from very little experience. We need no more than a single small instance to know that it is equally true of all numbers. What is *perceived* in seven and five is at once *be-*

lieved of all numbers however great—hundreds, thousands, millions. There is no proportion between the extent of the *experience* and that of the *inference.* A few repeated observations may be required to separate in our minds what belongs to the *numbers*, from what belongs to the *objects* numbered. But when this is done, no enlargement of *experience* will increase our conviction, and no enlargement of *inference* will lessen it. The *reason* for such vast generalizations is found, in the impossibility and absurdity of supposing anything different. That equals should be added to equals, and yet their sums be unequal, cannot be *thought* of as a possibility, and therefore cannot be *believed* as a reality.

In the same way the other axiom of Addition is known, that the sums will be the same in whatever *order* the numbers are added. The *sameness* of the numbers is a *reason* for inferring *unconditionally* and *universally* the *equality* of the sums, whatever change is made in the *order* of addition. Thus $7+5+3$ is known to be equal to $7+3+5$. In like manner we know in Subtraction, Multiplication, and Division, that whether the *wholes* of numbers are used or their *parts*, and in whatever *order* they are taken, the result always is and must be the same. In Subtraction we also know that the *difference* of any two numbers is the same, if they are increased or decreased by the same; in Multiplication, that the *product* is the same, whichever of two numbers is the *multiplier;* in Division, that if the quotient is made the divisor, the divisor becomes the quotient; and both in Multiplication and Division, that the result is the same, whether we use whole numbers or their factors. Thus $27 \times 24 = 3 \times 9 \times 4 \times 6$. In the same manner we learn that numbers equal to the same are equal to one another, and other universal necessary propositions. These axioms could never be known or thought of, if the truth were not first known in some small single cases; but when thus known, the generalization at

once follows. The impossibility of *thinking* otherwise excludes the possibility of *believing* otherwise.

In using large numbers their real character is not discerned, and therefore the truth or untruth of statements is not immediately perceived; but in small numbers the truth or untruth is at once perceived, and from these all the generalizations of Number are obtained. No sane person has ever really doubted, in any application, the truth of the common rules of Arithmetic. These all depend on a few axioms, and the axioms are merely generalizations of what is perceived and believed in a few simple cases; which are sufficient for the largest conclusions, because they show *necessary* truths. All *quantities* are expressed by *numbers*, and where *qualities* are found to vary with *quantities*, both admit the same mode of expression, and are represented by Numbers. It is impossible to state the whole value of Arithmetic, in practice and in speculation.

2. Geometry.

DEFINITIONS are the foundation of Geometry. They are partial descriptions of the objects referred to, stating some things from which others are inferred. From the Definitions a great number of propositions are obtained by simple reflection, and known to be true certainly and universally. A *point* is the smallest perceptible object, or that which to the eye is indivisible: a *right line* is one formed by a succession of points following one another in the same direction, and all rectilinear *figures* are contained by such lines. Whether there are such perceptible figures or not, there certainly are portions of *space* that exactly agree with the definitions, and these are easily thought of. The Definitions are more *simple* than any descriptions which should more exactly agree with *material* objects, and they are the most *suitable* statements for many. From them only can we reason deductively, and gain conclusions both certain and universal.

AXIOMS are the general expression of such reasoning, and from them alone nothing can be inferred. They are not the truths first known, by which particular propositions are proved, but generalizations of the primary reasoning in simple particular cases. They are useful in complicated cases, because the same truth is not so readily discerned in them. If the axiom, the general proposition, be denied, the particular proposition must be denied also; but this is owing to its character as a *necessary* truth, which if true in one case is equally true in all, and not to a previous knowledge of the axiom. Axioms are laws of *reasoning*, but they are also laws of the *objects* on which we reason. The *things*—lines, angles, and figures—that are equal to the same, are the *things* that are equal. The axiom refers to the *object* perceived or thought of. No axioms refer merely to the Mind.

Many of the axioms of Geometry and Arithmetic are the same; and all are obtained in the same way—by observation and reflection on small simple cases. If we draw on paper, or set before our minds, two right lines going from the same point in different directions, we perceive that they do not again meet, but go further and further from one another. This is a sufficient *reason* for concluding that they never will meet, however far extended; and for the further conclusion that no power could make them meet, and for the yet greater inference that so it is with all right lines, and that no two can include a space. When they begin to diverge from any point, we know without any measurement what must follow their prolongation. No change of time or place or magnitude; no power, material or mental, can make such lines come together again. We know this in one case, and therefore know it universally; we know it in a single small example, of lines an inch in length, and then we know it with the same certainty of lines that would reach across the earth's orbit. From one instance clearly considered, we re-

ceive the strongest possible conviction, of the largest possible extent. Why is this but because the connection perceived is not simply natural, but necessary?

In all the demonstrations of Euclid the argument refers only to a single small example, but the conclusion given is universal. If two sides of one triangle are equal to the two sides of another, and the included angles also are equal, then from these equalities others are deduced; the bases and the angles on them are likewise equal. Without any measurement this is known by inference from the equalities first stated. In these a *reason* is perceived for the conclusion, and a *reason* of such a kind that the conclusion must follow. The connection is necessary. Any other *belief* is impossible, as any other *thought* is impossible. Therefore at once we pass from a single example to a universal proposition, and from triangles described on a small piece of paper to triangles that extend to the limits of the solar system.

The truths of Arithmetic and Geometry have peculiar interest and importance, on account of their absolute certainty, their boundless extent, and their universal application. The name of Science was once restricted to truths of this description, and refused to the knowledge of Nature, because it was thought that all objects known through the *senses* were uncertain and changeable. The undue exaltation of the Natural, and especially the Material Sciences, is the opposite extreme. The great progress in our knowledge of Nature is due to the application of Arithmetic and Geometry, and the first of these is of daily use to every person. Both are of the highest value, in showing the capacity of human intelligence. Mind is not restricted to impressions made on the bodily senses, and to truths learnt by long experience. Children rise in the experience of every day to a higher region. From the beginning of life we have some knowledge of what is certain, unchangeable, and universal;

and this knowledge is easily gained and constantly used, and it is verified wherever experience extends.*

* It has been said that the propositions of Arithmetic and Geometry are *identical* propositions, the same thing being said in a different way. But the undivided whole is not the *same* as all the parts. One order is not the *same* as another. Numbers are not the *same* when increased or diminished. The multiplier and the multiplicand, the divisor and the dividend, are not the *same*. Small numbers and figures are not the *same* as large, nor can one be the *same* as all. The propositions respecting the latter are different, and can only be inferred. That these *differences* make no difference is quite true, but this is an inference from the *necessary* connection which is perceived between some antecedents and consequences. It could not be known if there were only a *natural* connection. These truths are known by the exercise of Reason, which discerns in a single object the *reason* for universal conclusions. That in another world, or a thousand ages from the present time, the addition of equals to equals should make unequals, and parallel lines meet, the common-sense of mankind declares to be impossible and absurd. What is *necessarily* true, is so everywhere and always, to us and to all. To reject such truths, because they cannot be perceived in Nature, is like denying colours because they cannot be heard, and sounds because they cannot be seen.

CHAPTER III.

METAPHYSICAL CONVICTIONS.

METAPHYSICAL Science is certainly not necessary for all, nor is Physical Science. The truths of both are indispensable to human welfare, but not the scientific knowledge of either. Both are generally accepted, with only the confirmation supplied by common experience; but both are of high interest and value apart from their practical use. In both there are liabilities to mistakes of many kinds, and as physical errors are corrected by physical truths, so metaphysical errors are to be met by metaphysical truths.

In considering Intuitions we found that there is direct knowledge of what is natural or physical—Body and Mind; and also of what is preternatural or metaphysical—Space and Duration. Intuitions belong to the same Faculty; for the physical intuitions can never be without the metaphysical, nor the metaphysical without the physical. But the objects perceived are not the same; for Body moves and Space does not; and the Duration perceived with Body and Mind passes away while they remain. The difference is further evident in the different convictions that always arise from the consideration of the physical and the metaphysical. Our beliefs respecting Space and Duration are like Mathematical Convictions, and not like those respecting Nature. From a very small experience convictions come that are certain and universal.

1. Space.

The first knowledge of Space is *intuitional*, but the later and larger knowledge is *inferential*, as with all other objects. Inferences of every kind come from the exercise of Reason. We pass from what is first known to what is known thereby, finding in the former some *reason* for what is believed in the latter. The principal truths respecting Space are the following, which are given together because the same observations apply to all.

1. All parts of Space, excepting the smallest, are extended and divisible; and all are inseparable and immoveable.

2. All its parts are exactly alike, except in magnitude and position.

3. There is Space beyond any boundary known or thought of.

4. There was Space before, and there will be after, any period known or thought of.

Space, when once perceived, is perceived to be such, that we must believe it was, and will be, what it is perceived to be; while we cannot believe that it ever has any movement or change. We cannot but believe that there is further space in every direction, and that the space inferred is exactly like that perceived. We are as sure that there was space before the formation of the earth, as that there is space where we now stand; that there is space beyond the most distant star, as that there is space beyond the walls of our house. Such as Space is perceived to be now and here, it is believed to be everywhere and always. The actual experience of Body is as large as the actual experience of space, but no convictions belong to the former like those which belong to the latter. The portion of space first perceived and thought of is very small, and the observed period of its existence is very short; yet we believe that all space in all time is like

that first known. There is a sufficient reason for these conclusions, since what is *necessary* is the same everywhere and always; but such inferences from simply *natural* connections would be equally unnatural and unreasonable. What is first perceived and inferred respecting some small portion of Space, is at once extended to all Space. No large number of experiences are requisite for the universal beliefs which arise in our minds. A few are needed that Space may be considered by itself, and then unconditional and universal convictions at once follow. We are sure that the properties of Space inside our rooms, and beyond the solar system, are precisely the same. We believe of every portion of Space that it is extended and divisible, immoveable and unchangeable, indestructible and eternal, and that the whole of Space is Infinite. We may have some beliefs respecting Space similar to those respecting Body; but we have other convictions that differ greatly in origin, nature, and extent. These show that, while all knowledge begins with an experience of the existence and actual connections of objects, there are some which, when once known to exist and to be connected, are known to exist and to be connected *necessarily*, and therefore everywhere and always.

The body we see to be *blue* we cannot suppose to be at the same time *not blue*, but we can easily suppose that it had and will have another colour. The space we perceive to be extended, we cannot suppose ever to be different from what we perceive it to be. The *thought* is impossible, and the belief also. We can easily suppose that there is no *body* beyond certain limits, or that the *body* there is different; but we cannot suppose that there is no *space* there, or that the space is different.

The knowledge of finite Space precedes the knowledge of the Infinite; and if we had not the former, we could not have the latter. But Infinite Space does not exist before finite. If there were not the *former*, there could not be the

latter; and if there were not the *latter*, there could not be the *former*. The *knowledge* of the Infinite is conditioned by that of the Finite, but the *existence* of both is alike unconditioned.*

2. Duration.

The knowledge of Duration is similar to that of Space, and some of the general propositions respecting them are the same, while others are contrary. When we perceive any object, material or mental, we perceive also the Duration in which it exists. When conscious of our own minds or bodies, or of any of their states and qualities, we are at the same time conscious of the Duration, the moments or minutes in which they are. If we know that anything has existed for days or years, we must know the days and years of their existence. Neither the *objects* of which we are conscious, nor the *times* of which we are conscious, are inferred one from the other, or known one after the other; but both are at once known directly, intuitively. We cannot perceive Duration without some object existing in it, nor can we perceive

* We must believe that Space is infinite in *extent*, but there is no reason for believing that it is infinitely *divisible*. The divisibility of Space is like that of Body; and as there is an *atom* of the latter which cannot be divided, so there must be a similar part of the former. The part of Matter that is *indivisible* to the naked eye, becomes *divisible* when seen through a microscope; and with microscopes of increasing power, the apparently *indivisible* parts become *divisible*. But this soon comes to an end. If microscopes could increase in power *infinitely*, then only would Matter be *infinitely* divisible; but if Matter is not thus divisible, neither is Space. The belief that the *smallest* part of Space is divisible, comes from the supposition that it is in *all* respects like the larger. It must be like in *some*, or no multiplication of the small would make the large. But it is not like in the very thing *assumed;* for while the larger space contains a *divisible* body, the smallest does not. The ever-increasing power of telescopes is not requisite to our knowledge of infinite Space; and there is no such absurdity in supposing that there is a *point* which cannot be *divided*, as there is in supposing that there is a boundary beyond which there is no Space.

any object without perceiving the duration in which it exists and is perceived. We cannot think of Mind or Matter without Duration, but we think of Duration alone; we think of it as being before the Mind and Matter, with which it is always perceived. Of Duration we know:

1. That all its parts but the smallest are extended and divisible; but while those of Space are immoveable, those of Duration are ever passing away.

2. All its parts are alike, except in magnitude and position; but while all the parts of Space coexist, no two parts of Duration ever do.

3. All existing objects coexist in the same Duration, but no two bodies coexist in the same Space.

4. There was Duration before, and there will be Duration after, any period known or thought of.

These truths are either intuitive or inferential, and what is first perceived or believed in some small cases, is at once inferred of all Duration. The Intuitions are very limited, but the Inferences have no limit. The Intuitions are like those of Body and Mind; but the Inferences are like those of Number, Magnitude, and Space. We are as sure that there was Duration *before* the many millions of years that may have passed since the earth began to move, as that there was Duration before the human race appeared, or before our own birth. We know that there will be Duration *after* another period equally long, as surely as that there will be Duration to-morrow. That which Duration is seen to be now, that it ever has been and ever will be. What it is now to us, that it is to all beings throughout the universe. Duration is perceived by us to be such, that any change in its existence, any difference in its properties, is beyond the capacity of thought. That which cannot be *conceived*, because of its evident impossibility and absurdity, cannot be *believed*. Of Duration and Space, we find it impossible to *think* of them

as not being what they are, and where they are, and when they are. We therefore cannot but *believe* them to be everywhere what we now find them to be.

These Metaphysical Convictions are like the Mathematical, and differ much from the Convictions of Experience respecting Nature; but this is no reason for rejecting them. That Nature *does* extend far beyond Experience, we know surely by the exercise of Reason in one way; that Space and Duration *must* extend still further, and have no bounds, we know surely by the exercise of Reason in another way. With *natural* connections, a large and long experience is requisite for strong convictions; but with *necessary* connections, a small and short experience is sufficient. The former are believed to be certain, though the contrary is thought to be possible; and much more are the latter believed, since the contrary even in thought is found to be impossible.

That Space and Duration are not *properties* of the objects which are known with them, is quite evident; for all *properties* must begin and end with the objects to which they belong. But it is never so with Space and Duration. Their *existence* does not depend on any particular object, though the first *knowledge* of their existence does. The convictions respecting Space and Duration differ, in nature and extent, from any convictions respecting Matter and Mind; therefore they cannot be merely properties of these. No convictions can be regarded as showing only the nature and laws of Mind; they show also something of the objects. Body and Mind are perceived, and we have convictions respecting them. In like manner Space and Duration are perceived, and we have convictions respecting them. We have the same consciousness of the former and of the latter, and the Intuitions are the same, though the Inferences are different. The Intuitions and the Inferences respect what is not in ourselves. We are not immovable, unchangeable, indestructible as Space, nor eternal as Duration. That it is

a property or law of our Minds so to perceive and believe, cannot be a *reason* for supposing that there is nothing to be perceived and believed. It has strangely been represented as a great and valuable discovery that Space and Duration have no *real* existence, but that they are merely mental *forms*, belonging to human intelligence, and having no external reality. But if the Intuitions and Convictions respecting Space and Duration are rejected, there are none to be maintained; for none have greater evidence. If these are rejected, all *knowledge* of Matter and Mind must be rejected also; for of Matter without Space, and of Mind without Duration, we can have no idea or knowledge. The denial of the objective reality of Space and Duration is said to remove certain philosophical and theological difficulties. It may be so, but it is only by denying the trustworthiness of all human intelligence, and the truth of all human knowledge.

The characteristics of the convictions, on account of which their *objective* unreality is maintained, are Priority, Necessity, Universality, and Unity. But it has never been shown that these characteristics come wholly from within, and are merely *subjective*. Why should not these characteristics be equally true of objective Space and Duration? There is no *priority* of knowledge. The *capacity* for knowing precedes all knowledge; but the *capacity* is not an *intuition* nor an *idea*. We have *intuitions* of all kinds without any prior *ideas*. Ideas follow, and through them Beliefs of every kind. The laws of Reason by which we know the constitution and course of Nature are entirely *subjective*, yet an *objective* corresponding reality is not denied, but maintained. So the laws of Reason by which we know the existence and properties of Space and Duration are *subjective*, but an *objective* reality is not therefore to be rejected. Much confusion has been occasioned by neglecting to distinguish between Intuitions and Convictions, and between a limited portion of Space and Duration, and the Space and Duration

which are infinite. To these as wholes a Unity is naturally attributed, which cannot be any reason for denying the reality of parts. The Unity of Space and Duration is like the unity of the atmosphere and the ocean, of the world and the universe. A multitude of real objects are combined in one whole. The parts of Space and Duration are all connected; they are exactly alike, and they are distinguished from every other object. It is therefore quite natural and proper that all their parts taken together should be regarded as One.

Infinite Space and Infinite Duration do not show the Divine Spirit, who is eternal and omnipresent; but they are some preparation for this knowledge. That there *must* be infinite Space and infinite Duration proves that there *may* be One who "inhabits Eternity," whose being and perfections are unchangeable and incomprehensible, who is the same everywhere and always, who is ever acting but never moves from place to place, who is with all beings and is known only through them, who is different from all, before all and beyond all and above all. That men are capable of knowing any objects eternal and infinite, is some sign that their nature is not allied only to the earthly and temporal. However long the period of this world's existence, and however vast the magnitudes and distances of the sun and the globes revolving round it, they are small objects compared with the Infinity and Eternity which encompass us. Yet children can know these, though no human intelligence is able to comprehend them.*

* It does not detract from the Divine Power to believe that some objects are uncreated and indestructible, not dependent on the Divine Will. Mathematical truths, Logical principles, Moral right and wrong are not made, and cannot be changed. It is the perfection of God that He cannot do wrong. No *power* can alter the properties of numbers and triangles, or make contradictions possible, or change wrong into right. This is not from insufficiency, but because *power* has no relation to these objects. It is therefore quite consistent with Divine Perfection that Duration and Space should be *necessary* in themselves, the *condition* of all action and existence, both human and Divine.

3. Causation.

1. All Metaphysical Convictions, though they differ in some particulars, agree in their general character. We have a small direct knowledge of Space with every experience of Body; and from this we know that there *must* be Space beyond experience, while we only know that there *may* be Body. We have a direct knowledge of Duration with every experience of Mind and Body; and from this we know that there *must* be Duration beyond experience, and that there *may* be Mind and Body like that which is known by experience. We also know that there *must* be either the previous existence of the objects known, or some Power to produce them. Without any further experience, the pre-existence of a Power able to produce what comes into being is known, as surely as the prior existence of Space and Duration. The previous existence of Space and Duration will not at all account for the *becoming* of Body and Mind; there *must* be some other antecedent. The common saying, *Nothing can come out of nothing*, expresses the universal conviction of mankind, and is approved by the highest Reason. As Space and Duration differ from Matter and Mind, so does the Metaphysical Cause differ from the Physical.*

* Causation is the principal of several topics referred to in Ontology. Little can be said of Being universally. The distinction of Subject, Properties, Accidents, is common to all. The *subject* is that to which *properties* and *accidents* are attributed; the former in all times, the latter in some. Being is *finite* or *infinite*, *dependent* or *independent*; and these are also distinguished as *conditioned* or *absolute*. No Being can be known or thought of apart from *some* relation to other beings. Therefore if *all* relations are meant by *unconditioned*, such an Absolute Being is inconceivable and impossible; but if only the *one* relation of *dependence* is meant, the First Cause of all things is *absolute* or *unconditioned*.

In Logic the *subject* and *attributes* are regarded merely as Forms of Thought. In Ontology they are regarded as Real Existences.

Four kinds of Causes have been distinguished: the Material, or the *substance* out of which anything is made; the Formal, or the *idea* according to which it is made; the Final, or the *purpose* for which it is made; the Efficient, or the *power* by which it is made. The last is commonly meant by the term Cause.

2. We should not think of *accounting* for anything, and should not suppose there was a *reason* for anything, if Experience did not show that some things did partially *account* for others. The *prior* existence of any object is a *reason* for its *present* existence, and the latter is *accounted* for by the former.

It is only when an object has *come to be*, that we look for a Cause of its being; but for all that *becomes*, that begins to be, there must be a Cause, a Power adequate to its production. It is as impossible for us to suppose the commencement of any Body or Mind without such a Cause, as it is to suppose that Space and Duration begin or end at any limit, beyond which there is none. If of any Body or Mind we know that *now* it is, and that *once* it was not, then we know that there must be a Cause of its existence, a Power to produce it: the action of which is a *reason* for its being, and accounts for it; not less than *prior* existence would account for *present* existence. As any *substance* is accounted for by its prior existence, so is any *form*, or any *combination*, or any *quality*, or any *power*; but if these *begin* to be, there must be some Cause to account for their existence, and for their being what they are.

3. Most of the changes in the world are partially *accounted* for by their Natural Causes, when these are believed to have some corresponding force or power. This *power* is never perceived in any natural antecedent, but is attributed to it from a knowledge of the consequent, and becomes a *reason* for what is regarded as the *effect*. Thus the *force* attributed to a moving bat *accounts* for the motion of the ball, and the *force* attributed to fire and gunpowder is a *reason* for the explosion which follows their connection; and so some *power* is attributed to all *natural causes*, without which they would not be Causes. Night constantly precedes Day, and Winter is always followed by Spring; but no one ever speaks

of these antecedents as Causes, since no *power* to produce the consequents can be attributed to them. The same change may be produced by different natural causes; and some *power*, either the same or different, is supposed in each to account for the *effect*. This power is more readily supposed where there is some evident *correspondence*, as in the communication of motion by impulse, and other examples of mechanical force. No such *agreement* can be imagined in terrestrial gravitation and magnetic attraction; but notwithstanding this, some kind of *power* is always attributed to them, and to whatever is regarded as a natural Cause. We believe that there must be some *reason* or *cause* for all observed changes; and natural antecedents are called Causes only when some *power* is attributed to them, which in some measure *accounts* for their effects.

Material Causes are always lessened by exercise; for there is an expenditure of *force*, and as much is lost by one object as is communicated to another. Some belief in natural Powers, mental and material, is universal, and perfectly reasonable, though some conceptions of their nature are unreasonable. More than constant connection and partial resemblance are meant by all, when one object is declared to be the Cause of another. Persistent *power* of some kind is supposed, and this is believed, because a *single force* accounts for a large number of *various facts;* and when one cause is believed to be sufficient, more will not and should not be supposed. This inferred power is sometimes *latent* and sometimes *active*, and may be either with or without counteracting forces. The motion which one body receives, is partly accounted for by that which another body loses, as when one ball strikes another; or by the loss of force of another kind, as when the combustion of coal causes the motion of a steam-engine. Natural forces are real, and account for some things, but not for all. Antecedent *similarities* are not themselves *forces*. The *figure* on a

seal *accounts* for that on the wax, only when the one is *pressed* on the other; and only in the same way do any *types* account for a *printed* page. Many successive *similar* sketches always precede a *finished* picture; but no one ever thinks of these sketches as producing one another, or fancies that the first rude pencil-drawing is the Cause of the final complete and coloured painting.

4. Human purposes and efforts are the antecedents, which more fully account for consequents, than any other natural cause. We choose and try to see more clearly, and vision is more distinct. We choose and try to keep some thoughts, and they stay. We choose and try to move our limbs, and they move as we wish. According to the *purpose* of the mind, is the movement of the hand; and according to this, is the movement of what we touch, the arrangement and combination of various objects. According to the *purpose* of a watchmaker, is the construction of the watch; according to the *design* of an artist, is the composition of a picture; according to the *plan* of a builder, is the formation of the house; according to the *thoughts* of an author, is the work produced by his pen. The *prior* existence of the *materials* will account for their *present* existence, but for nothing more; not in the least for the existence of the watch, the picture, the house, the book. An *intelligent purpose* accounts for them, but nothing else can. This is a *reason* for their being what they are, and nothing else is. Therefore purpose, design, plan, intention, are requisite in the Cause of such productions. We do not thus account for all that is found in these works, but for much, and for that which is of chief interest and value.*

* In human choice and effort there is much more than the agreement of a single antecedent and consequent. Volition determines (1) movement, (2) direction, (3) duration, (4) extent, (5) intensity, (6) repetition, (7) change. It is from innumerable exact correspondences between

5. In these various ways Experience shows that objects are to be *accounted* for, that there is a *reason* for what they are, and a ground for the further inference of Reason—that there is a Cause *adequate* to their production, having some *power* which is a *reason* for their being. We should not know by Reason that unlimited Space and Duration existed, if Experience did not first give the knowledge of what is *finite;* but then Reason gives with certainty the knowledge of what is *infinite.* So we should not know by Reason that there was an *adequate* Cause, if Experience did not first give the knowledge of some that are *partial;* but then Reason gives with certainty the knowledge of a Cause fully *adequate,* fully *accounting* for every effect. We do not perceive *perfect* circles in Nature, but we easily think of them, and know that there must be such portions of Space; and so though we do not perceive in Nature any *adequate* Cause, we can easily think of such; and with the *conception* of this Cause there is the *conviction* of its necessity. According to the *extent* of Experience we believe that there are *natural causes,* and that these exist far beyond the limits of any actual experience. But whether they are or not, we cannot consider any object as coming into existence, without the conviction that there is for it an adequate Cause. There is the same impossibility and absurdity in supposing that our bodies and minds came into existence without such a Cause, as there is in supposing that there is no Space beyond the reach of our arms, no Duration before our birth. We cannot think of a *tree,* or a *horse,* or a *man,* or a *world,* as beginning to be, without believing that there was a preceding and producing

antecedents and consequents, combined with the consciousness of the *same self* as the one agent of many bodily motions, that we come to regard *volition* as the *cause* of action. It not only *precedes,* but *produces* motion, *accounting* for all that is determined by choice. Subsequently other volitions, and other antecedents, are regarded as *causes,* when but *few* correspondences are discerned or supposed.

Power. And if any *power* is to be inferred, it must be one *able* to produce them; for there is the same *reason* for believing that there must be a *sufficient* Power, that there is for believing the pre-existence of *any* Power. That which Reason assures us *must* precede every natural change, is an Adequate Cause.*

6. We are quite sure that all Living beings, plants and animals, begin to be; and there must be some Cause of their being, and of their being what they are. The *natural cause* is known only by a large experience, but some *adequate cause* is believed when there is no experience to show the *natural cause.* From the large and invariable experience of mankind, we are quite sure that plants are the *natural causes*

* Wrong judgments respecting *distance* are all testimonies to the *reality* of some distance. Errors respecting *moral* right and wrong show the universality of Conscience, and the *reality* of some right and wrong. False religions are witnesses that there is a *true* religion. So erroneous opinions respecting the *efficiency* of natural causes, are testimonies to the reality of an Efficient Cause. False principles, once assumed, will prevent any inference however obvious and true. But human reason freely exercised, in children as well as in men, comes directly and certainly to the same conclusion—that there must be an *adequate cause* for whatever *comes into existence.* This conviction does not arise on the consideration of any deliberate choice, and should not be extended to such volitions. Axioms are not evidences, but generalisations of self-evident truths. If *natural* causes are supposed to be *adequate*, no other will be *inferred;* but if they are known not to be so, then an *adequate* cause must be found elsewhere.

If *inseparable association* is substituted for *necessary connection*, there is still the testimony of mankind to the reality of some *apparent causes;* and thus there is the evidence of the largest possible experience, not only to the ever-increasing convictions of men, but also to the existence in all ages of those *correspondences* between some antecedents and their consequents, which have gradually produced the universal convictions that there must be *causes.* If *necessity* were disproved, *causation* remains as the lesson of Experience, surely apprehended by Reason in one way, if not in the other.

of plants, and animals of animals; but there is no difficulty in thinking otherwise. We can *think* of natural *effects*, as resulting from other natural *causes*, or without any. Whatever we may *believe* to be true, there is certainly no difficulty in *supposing* that plants should be the *natural causes* of animals, and lifeless matter of both these; or that all things should come, without any *natural* cause, from the Will of the Creator. These views have been held, and they are easily *thought* of by those who do not *believe* them. But we cannot think of any *natural object*, as coming into existence without some adequate Cause. This is quite impossible. The parent plants, and animals, are sufficient to *account* for the small portion of matter, which passes from them to their offspring; but for nothing more. They cannot account for that of which they know nothing—for the wonderful structure of the new plant and the new animal; for the new living beings which come in addition to those already existing, the previous life continuing undiminished; and being followed by an indefinite, incalculable number of other living beings, with like powers of assimilation and reproduction. The offspring of plants and animals are like their parents; but not from the parents' knowledge, or choice, or ability. In what is first seen or supposed of the parents, there is nothing to account for what afterwards appears in their offspring.

7. It is as certain as any truth of Natural Science, that ages ago there were no plants and animals in the world. The Earth was probably a fiery molten mass, surrounded with heated vapour, and without a single living organism of any kind. There must be a Cause of the changes which have since taken place. Hot solids, fluids and gases, could never in any period of time, by any motions and combinations, be the real and sufficient Causes of the plants, animals, and men now existing on the surface of the earth, with so much beauty and fruitfulness, so much varied

activity and enjoyment. Matter is supposed to require pre-existent Matter, and Force pre-existent Force; much more does Mind require pre-existent Mind. That which has no consciousness, intelligence, affection, choice, cannot account for beings, of whom these are the chief characteristics. That any material Protoplasm should be the real Cause of a single Mind is unreasonable; but that it is the sufficient Cause of all the living inhabitants of the world, is a supposition more unreasonable than the most extravagant fancy that has ever arisen in men's minds, whether sane or insane. Natural Causes are sufficient only for a few things, and this limited sufficiency is from *powers*, attributed to them by inference. Natural Causes, which themselves begin to be, must *receive* all their powers; and being thus dependent on another, they can never be themselves *sufficient* causes. They cannot be more than partial effects and signs of a Supreme Cause. The *greater* may contain the *less*, and the *higher* account for the lower; but the reverse is evidently impossible.

8. The First Cause of all beings may be greater, but cannot be less than all the works through which He is known; nor can He be in anything inferior to the highest and best. The lowest objects of Nature testify to a Power able to produce all the varieties of form and magnitude, of structure and action, which they exhibit. The instincts and enjoyments of animals show an Intelligence and Beneficence, which provides for the wants of all, and gives a measure of happiness to all. But the highest knowledge of the First Cause can be given only by, and to, the highest beings who have come into existence. The wisdom and goodness seen in Human conduct and character, are the effects and manifestations of a Superior Wisdom and Goodness, free from all faults and limitations. It may be said that the Finite cannot prove the Infinite. But the Finite known surpasses all comprehension; it is beyond and above all the possibilities of

thinking; and on the common principle of Experience, more than the Incomprehensible Finite will be certainly believed. Reason and Conscience lead to the conviction of One Being, whose power and knowledge exceed all thought, whose wisdom, righteousness, and goodness are Perfect. As He is greater than men, so He must be better. That all His works and ways do not appear to us wise and good, is because they are only partially and imperfectly known. This cannot seem strange, if we remember that the works and ways of men are never fully understood, by any who are inferior to them in knowledge and in goodness.

9. We must know *how* things are made, in order that we may make them; but all that is needed for religion is the assurance that, in whatever way natural objects are produced, they come from a First Cause, on whom they depend, of whose character and will they are some manifestation. Scripture does not declare the *mode* of Creation and Government attributed to God; but simply states that there is One, of whom and by whom and for whom are all things. That there is a Primary Cause we know certainly, and all religion is some acknowledgment of this. That there are also Secondary Causes is surely known, and these are recognized in all common and scientific thought. That the latter are sustained, and subject to guidance and control, is evident from their nature; but *how* natural causes are related to the First Cause is beyond our knowledge. Reason gives us the reality of both, and Religion does the same; but neither require that the action of the Primary Cause should be without that of Secondary Causes. God is known through His works, though we know not the mode of His operation; and governs by ministers, known or unknown, who, consciously or unconsciously, fulfil His purposes.*

* If "in Him we live and move and have our being," so it must be with all agents and objects. They can have no *power* but that which is

10. Physical Causes and Metaphysical are both of them real and known. Though often confounded they are very different, and should be always distinguished. Physical Causes are parts of Nature: they are known to be *causes* only by many observations; they are conditional, probable, and general; they are not known to be *reasons* for their effects, nor to be necessary; they are not always near to their effects, and only in part correspond to them and vary with them. Such are Natural Causes. Metaphysical Causes are the *actions* of some Power which is beyond Nature. They are never directly perceived, being known by inference from single changes; they are unconditional, certain, universal; they are sufficient reasons with which the effects are necessary; they are near to them and fully correspond to them, continue and vary with them. Such actions are Metaphysical Causes, and the Power to which they belong is known by all the Effects.*

given them, but the possession of *power* is different from its *voluntary* exercise. The former *must* be according to the Divine will; the latter *may* be in opposition, or there could be no wrong. The *gift* is to be distinguished from the *giver*. There is a *power* which is limited and changing, and may be rightly or wrongly used; and there is a Power infinite and unchanging, which is ever perfectly wise and good.

* The axioms of Causation, which belong only to Metaphysical Causes, have been misapplied to Physical Causes, with which they agree only partially and never necessarily. That there *must* be a Cause, that it must in some way contain the whole effect, and be where and when the effect is, and cannot be either greater or less—are true statements of the *actions* which are *efficient* causes, but not of the *antecedents* which are *natural* causes. Some *efficient* cause is *necessary*, but no *natural* cause is. The efficient *action* must be when and where the *effect* is. It cannot be *less*, or there would be no cause for a portion of the effect; nor can it be *greater*, or there would be some efficient *action* producing no effect. The Agent of many actions must have Power corresponding to all the *actions* inferred from all effects. Not in any number of material atoms are the potency and promise of all forms of existence,

of all matter and all mind; but in the One Eternal and Infinite Spirit whose offspring we are.

The *many* lead to the knowledge of One; for similarity, mutual dependence, and conduciveness to the same end, show unity in plurality. The *finite* leads to a knowledge of the Infinite; for we find it impossible to believe that there is nothing beyond any known limit.

Beings who begin to be and are ever changing, lead to the knowledge of the Eternal changeless Cause of all; for it is impossible to believe that such beings come out of nothing, or are self-produced, or proceed from any power not adequate to their production. The *dependent* declare and partially manifest the Independent. Therefore it is known easily and surely, though very imperfectly, that there is an Adequate Efficient Cause, preceding, producing, pervading all beings that come into existence, the Creator, Preserver, Governor of all; the Author and Giver of all strength and wisdom, happiness and goodness.

CHAPTER IV.

LOGICAL CONVICTIONS.

1. PURE or FORMAL LOGIC refers only to the *forms* or modes of thought, as expressed in *propositions* and *syllogisms*. It does not regard the *truth* of propositions, except in relation to some other propositions. It shows what propositions are true or false, when other propositions are set down as true or false. It is universal; for it belongs equally to all objects of which we think, material and mental, concrete and abstract. The *signs* used in Logic are like those of Algebra, the most *general* that can be employed. If they meant nothing, they could not be of any use; but because they mean so little, they have the widest application; and they supply the best expressions for the Laws of thought and reasoning, which are the same for all objects. They are therefore *objective* as well as *subjective*. Propositions may express either Intuitions or Beliefs; but all *universal* propositions express Beliefs; for they state more than can be directly *perceived*. Logic shows how from a few simple propositions, a large number of different propositions may be deduced without any uncertainty. Logical convictions agree with Mathematical and Metaphysical, in that they are gained from small single examples which show a *necessary* truth, and lead at once to a *universal* conclusion.*

* Pure Logic refers primarily to the *meaning* of words, to *thoughts*, and these are objects of Intuition. But both words and thoughts are *representative*, and they refer to objects not present; and so do *proposi-*

2. We may perceive *intuitively* the coexistence of a circle and a square, and the coexistence of the square with a triangle; and we may also perceive that the circle and triangle coexist. But we cannot so *perceive* the truth of the *universal* proposition, that *whatever* objects coexist with the same *must* coexist with one another. In like manner we may see a *large circle*, that includes a *small circle*, which contains a *point*, and we perceive *intuitively* that the *point* is also contained in the *large circle*. But when we say, So it *must* be, and so it is with *all* circles, we state more than we perceive, that which is known *inferentially*. This is still more evident when the statement is extended to all *figures* and to all *numbers;* and yet more when it is extended to all objects, terms, and propositions, that are thought of as one *comprehending* another.

Universality and Necessity are never known *intuitively;* for they go beyond all possible presentation or representation. But no large experience is requisite for the *universal* conclusions of Logic; and the largest experience of merely *natural* connections does not give the same kind of *conviction*. In Logic a *reason* for the consequent is perceived in the antecedent; it is perceived to be *unconditional;* the contrary involves a self-contradiction, and therefore what is *perceived* in a single case is believed to be *necessary* and *universal*. What is known to be true in one case, is equally true in all. Differences in time and place cannot change it, nor can differences in the magnitude and nature of the ob-

tions, which express some *conviction* or *belief*. The name or thought of *iron* stands for the material substance; and the proposition *iron is hard*, means that a material *substance* has a certain *quality*. Because of this the *names* are joined, and the *ideas* are mentally connected. What is first known of mental representations, either by intuition or inference, is through them extended to the objects represented.

Logic respects *things* as well as *thoughts;* but Formal Logic respects only the three mental products—Conception, Judgment, Reasoning—or their verbal expression—Terms, Propositions, Arguments.

ject, nor can any power make it otherwise. What is true of the smallest, is true of the largest; what is true here and now, is true everywhere and always; what is true to us, is true to all intelligent beings in the universe.*

3. The laws of Syllogisms and Propositions are similar, but they are distinct; for *propositions* may express only *intuitions*, but syllogisms give *beliefs*. They state the convictions which necessarily follow from some other convictions. If we believe that all men are mortal, and that the English people are men, then we must believe that they are mortal. If we believe that all men are mortal, and that angels are not mortal, then we must believe that they are not men. The convictions that come in any particular case may be referred to Axioms, but this is not their proper primary evidence. We reason thus before the axioms are thought of, and the general truth cannot be known before the particular. The particular proposition would not be true, if the universal were not; for they stand or fall together. In Logic what is not necessary always, is never so. But this connection does not show that the knowledge of the universal, is at all required for the knowledge of the particular. The particular is first known, and leads to the universal. The denial of a

* All universal conclusions depend on the principle, that what is *necessarily* true in *one* case must be true in all *similar* cases. If it is *necessary* that two dots added to two dots make four dots, it is equally so that two stars added to two stars make four stars. Similar cases must be different in *some* respects; for only *different* cases can be *similar;* but they differ only in what is perceived to be apart from the object or reason of the statement. Where there is perfect *similarity* in these, there is complete certainty and necessity in what is asserted of *all*, though first seen or believed only in *one*. In *natural* connections, *some* further similarity is inferred from *partial* similarity; but when no *necessary* connection is known, a large experience is requisite for a proportionate inference. If the antecedents are *assumed* to be perfectly similar, the consequents *must* follow; but this is merely a logical necessity.

syllogistic conclusion may in some cases be shown to be contrary to an intuitive perception; but this is not always possible, and is never requisite. Mathematical truths may be sometimes shown by measurement and numeration; but they never require this, and it is seldom possible. Magnitudes and Numbers are more surely, exactly, and extensively known, by considering what they are perceived to be in small examples; and so the laws of Thought and Reason are best known, by considering the simple examples in which these laws first appear. Mathematical and Logical conclusions often require verification, but this is on account of our liability to mistakes, and not because of any uncertainty in the principles of reasoning.

4. There are many other Logical Axioms respecting the Conversion and Opposition of Propositions, the Reduction of Syllogisms, and the relation of Categoricals, Hypotheticals, and Disjunctives. In all we pass from the consideration of single simple cases to universal conclusions, because there is sufficient evidence in one of a necessary connection. The Axioms of Logic, like those of Mathematics and Metaphysics, refer to real objects, as well as to states and laws of Mind. We do not say that things equal to the same *seem to us* to be equal, but that they *are* so, and *must* be so, and will be so known by all intelligent beings. We do not say, What is predicated of a class *seems to us* to be predicable of every object contained in the class, but so it *is*, and *must* be, and so it will be known by all who have Reason and use it. We do not say, Contraries *seem to us* to be incompatible, but it *is* impossible that both should be true, and no sane person can believe otherwise. Perceptions show something of the Mind perceiving and of the Object perceived. Thoughts are representative, and show something of the Mind thinking, and of the Object thought of. When any law of Thought is stated, it is an expression of something

not ourselves, as well as of our own intelligence. It is as contrary to consciousness to deny that objects equal to the same *are* equal, as to deny that they *appear* to be so. We have the same certain evidence of both. When thoughts do not *agree* with realities, then what is seen to be true of thoughts will be true only of them. Many thoughts of natural objects do not agree fully with what they are supposed to represent; and then what is true of the *idea* is not true of the *object*. It may be wholly false, or only an approximation to the truth. But the general conceptions of Logic cannot be false; for they contain nothing in which there is any possibility of error. The conception of the *subject* of a proposition is simply that of which something may be affirmed and denied; and the conception of the *predicate* is simply that of something affirmed or denied. Coexistence, Inclusion, Resemblance, and their contraries, are often surely known. That the objects thought of, whatever they may be or not be, agree exactly and fully with such simple conceptions, is self-evident with the highest possible certainty. But this agreement is all that is requisite to render the propositions of Pure Logic, as true *objectively* as they are *subjectively*, as true of *objects* as of our *thoughts*.

5. The chief uses of Logic are in distinguishing real from apparent arguments, or good arguments from bad; and in forming habits of clear and methodical thinking. Logic shows most plainly that there are connections of Thought with Thought, and of Belief with Belief, which are *necessary* as well as *natural* connections. The generalizations of Logic are of even greater extent than those of Mathematics and Metaphysics, and they have the same necessity and certainty. From the consideration of a few small examples we obtain at once universal conclusions, which we are obliged to accept because they are necessary. It surely ought not to be assumed that Nature is all that can be

known, and that Reason has no other axioms than those which belong to natural connections. There are convictions of Memory which are universally accepted as self-evident. There are convictions of Reason giving probable and limited conclusions from large experiences, and some that are quite certain and of great extent; these also are universally received. And so we have other convictions of Reason, giving absolute certainty and universality from the smallest experiences. These are sufficient for the largest inferences and the strongest beliefs, because they show, not what is known simply as natural, but that which is necessary. To our minds there is everywhere and always the combination of the certain and the probable, the contingent and the necessary, the changing and the unchanging, the transient and the eternal, the finite and the infinite. If all Necessary Truths are regarded as Contingent, the whole character of Arithmetic and Geometry, of Metaphysics and Logic, will be completely changed; and the peculiar certainty belonging to them, and given by them in some measure to the Physical Sciences, will be entirely overthrown. For such a revolution in the strongest convictions of mankind, more is requisite than plausible conjectures respecting the possible influence of constant associations, either in the individual or in innumerable preceding generations.*

* The necessary laws of Logic respecting Belief have been previously given, with the Necessary laws of Thought. (p. 112.) There are many Axioms besides those commonly given. Some are deducible from other axioms, but all are known from the consideration of simple cases. When A is greater than B, and B greater than C, we know at once that A is greater than C. When A is above B, and B above C, we know that A is above C. When it is known that something belongs to one of several, A or B or C, and it is found not to belong to A or B, we know that it belongs to C. When A is like B, and in the same respect at the same time B is like C, we know that A is like C. In all cases inferences may be drawn without axioms, but if true they will agree with some axioms. The *substitution of similars* is requisite when

either of the objects compared is only thought of, and this principle is of wide application; but it is not the only principle of reasoning.

In Syllogistic Reasoning, if both Premises are *certain*, so is the conclusion. If only one is *certain*, the conclusion has only the probability of the other. If both are only *probable*, the Conclusion has the *probability* which is expressed by multiplying the two *probabilities* of the Premises.

Thus if one Premise is certain, and the *probability* of the other is $\frac{3}{5}$, this will be the *probability* of the Conclusion. But if $\frac{3}{5}$ is the *probability* of each Premise, then $\frac{3}{5} \times \frac{3}{5} = \frac{9}{25}$ is the probability of the Conclusion. More than $\frac{1}{2}$ being called *probable*, and less than this *improbable*, it is evident that probable premises may lead to improbable Conclusions. The correctness of the rule for compound probabilities is easily seen. If two cases out of three in one premise favour a conclusion, so will six out of nine; and if two out of three in the other premise favour a conclusion, so will four out of six. There being then four favourable cases out of the six, and six out of the nine, there will evidently be only four favourable out of nine when both premises are combined.

In *dependent* evidences, unless *all* are *true*, the conclusion is not; and therefore the probability always *decreases*, as these evidences *increase* in number. But with *independent* evidences it is the reverse; for unless *all* are *untrue*, the conclusion is *true;* and as the former becomes *improbable*, the latter becomes *probable*. If there is the probability of $\frac{1}{2}$ that *each* of four testimonies is untrue, there is only the probability of $(\frac{1}{2})^4$, or $\frac{1}{16}$, that *all* are untrue; and therefore the high probability of $\frac{15}{16}$ that *one* is true. But unless *all* are untrue, *each* must be true when they agree. The same principle applies to all *independent* evidences, and is the reason for the strong conviction always received from several coinciding evidences, though separately they have little value. Their combination soon reaches certainty. Many common beliefs, for which the reason is not at first apparent, are thus shown to be not only natural, but perfectly reasonable.

DIVISION V.

INTELLECTUAL FACULTIES.

MENTAL Faculties are the *powers* inferred from the *states* of Mind of which we are conscious. All the *states* are transient, but the *powers* are permanent. They existed before they were known, and continue when they are not exercised, and when there is no consciousness of their possession. They are not like the parts of the body, which are known before the whole, and make the whole by their union. No single faculty can be known apart from the Self to which all belong, and in this we discern no parts. The whole Mind is concerned with every perception, remembrance, inference; and though the lower states appear without the higher, the higher always include the lower. Besides the general capacities of Intuition, Conception, and Conviction, others are often mentioned; as Attention, Memory, Abstraction, Imagination, Judgment, Reason. These are modifications of those already noticed, and they deserve some separate consideration, on account of their special importance, and the various ways in which their names are used.

CHAPTER I.

ATTENTION.

1. THIS state of mind is sometimes voluntary and sometimes involuntary, and because of its subjection to choice it is referred to a Faculty. Attention is the state in which what is present to the mind receives more regard, and is more fully observed, than it is ordinarily. Of the objects before our eyes, or the thoughts in our minds, we can select one and look at it earnestly. Then this one will be more clearly and fully known; while others become less apparent, and may entirely disappear. Without some attention the view will be obscure and partial, and it will have less influence. Only by attending successively to all the *parts*, can the knowledge of the *whole* be secured, and its full impression be received. Sometimes a continuous attention is requisite, and sometimes a repeated. Some studies require more of one kind of exercise, and some more of the other. In mental culture both should be regarded, that either may be given as the occasion demands. Impressions on the mind and body become fainter and feebler by *repetition*, if not attended to; but stronger and more vivid, if made the objects of Attention.

2. There may be attention without choice, and even in opposition to it. While in many cases we have to fix our minds on a subject, in other cases objects seem to fasten

themselves on us. When curiosity is awakened, or there is the excitement of any strong feeling, no effort of attention is needed. We look earnestly at the object if present, and when it is absent, thoughts come unsought again and again. We have by effort to attend to something else, that we may be free from them. The voluntary exercise of Attention is much aided by the use of the causes of involuntary attention. The effort alone soon becomes fatiguing and painful, and is often unsuccessful; but when Feeling has been excited, little if any exertion is needed. It is therefore of much importance, in the pursuit and communication of knowledge, to awaken an interest in the subject, so that attention may be given easily and involuntarily. Sensible objects also help to the steadiness of thought. Continuous thinking is made more easy by the use of language, spoken or written. Some therefore *talk* to others, and some to themselves; while all find that *writing* keeps the attention fixed on a subject, when without this no effort would suffice. Thus too *symbols* are useful, by keeping before the mind the subject, which may be beneficially thought of in many various ways.

3. The power of Attention, like all the Faculties of mind and body, appears to be strengthened and improved by moderate exercise, while it is injured and enfeebled by that which is excessive. The associations which produce *habit*, assist in many ways the exercise of attention; but the *power* is increased by use, as muscular power becomes greater through proper exercise. After a time, both mental and material works become easy and pleasant, which at first required painful effort. The power is lessened by weariness and sickness, and its exercise is facilitated by calmness and quiet. It is impossible to overrate the importance of the culture and exercise of Attention. All attainments in knowledge, all mental and moral improvement, depend upon it.

Without the proper exercise of Attention, men "have eyes, but they do not see, and ears, but they do not hear;" and they fail to receive pleasure and profit from that which properly regarded would be delightful and beneficial. An attentive observer will find "sermons in stones, books in the running brooks, and good in every thing." By choosing the objects to which attention is given we secure their remembrance, and by choosing the thoughts to which we attend we direct their course. We may thus obtain thoughts pure, pleasant, and conducive to all that is good; instead of thoughts impure, unpleasant, degrading, and worthless. "The Mind is its own place."

4. Very small is the direct power we have over our own minds. We can do little more than choose the objects of Attention. But as the small helm is sufficient to control a great ship, even when driven by a violent wind, so is it with the faculty of Attention. What we believe must be according to the evidence known; our emotions and affections must be according to the views we have of various objects; our purposes and actions will be according to the different motives present to our minds. We cannot directly choose what we shall believe or disbelieve, what we shall love or hate, nor by simple choice can we make our purposes effective. But indirectly, by choosing what we attend to, we determine our thoughts, our belief, our feelings, our actions. Belief and affection, conduct and character, internal and external condition, are thus made dependent on our own will. Honour and dishonour, life and death, are set before us, and we have to choose which we will take. Not to accept and strive for the better, is to accept and yield to the worse. The direct influence of the human will on matter and mind is very small; but its indirect influence is unlimited, and may all be traced back to the exercise of Attention. The greatest of English philosophers said, that all

his wonderful discoveries in Science, and his intellectual superiority, were due to keeping the subject of thought steadily before his mind. Similar is the testimony of the greatest French naturalist, who said, Genius is Patience.*

* Men can control their thoughts, as well as move their limbs; and this higher power is the foundation of Morality. There is no evidence that any animals have the same capacity.

CHAPTER II.

MEMORY.

1. REMEMBRANCE is a state of Mind which, like attention, is sometimes with choice and sometimes without. Voluntary remembrance is an exercise of Memory, and is the result of voluntary attention. Memory is the power of knowing the *past* by means of some representation, with more or less of the certainty which belongs to the *present*. It is much more than the capacity of receiving and retaining *impressions;* for there may be this without any knowledge or even thought of the past. In every complete Remembrance there are the two elements of Thought and Belief. There is the mental representation of some object, with the thought of a former time; and there is the belief of a corresponding reality, the object remembered, and the time when it was present. These parts do not always co-exist, nor do they vary alike. Frequently when the *thought* is clear and complete, the *belief* is strong and sure; but it is not always so. And when they agree, *thinking* and *believing* are different states of Mind; and their agreement only shows that their laws are *similar*, not that they are the *same*.

2. Memory is properly regarded as a Faculty, because so many remembrances depend on the will; but not all. We forget much that we wish to remember, and remember some things we would willingly forget. Choice is connected with remembrance in different ways, according to the Prior and

Later laws of Thought before noticed. By continued and frequent attention, objects may be fixed in our minds; and by chosen associations, thoughts may be recalled when they are wanted. They are as it were laid up in a storehouse, and so placed that they may easily be found. In recalling for present use what has been previously learnt, we have to attend to something by which it may be suggested, and to choose associations which may revive a former condition of mind. Something is already known of that of which we desire a full remembrance, and by laying hold of this, and keeping it in view, the other thoughts are brought back. This voluntary exercise of Memory is called Recollection. We may remember without choice, but recollect by choice. Both the mental representation of the past, and the belief of its reality, are much assisted by visible objects and local associations. The events and, in some degree, the feelings of childhood are reproduced when after many years men return to their homes. When there has been no recalling for a long time, we are liable to mistake apparent remembrances for real. But the testimony of Memory to the distant past, under favourable conditions, is often clear, complete, strong and sure.

3. The power of Memory is increased by exercise. It is generally stronger in youth than in old age. There is much difference at the beginning of life in natural ability, some remembering everything more easily than others. The three most desirable qualities of Memory are, facility, retentiveness, and readiness; and all these are improved by practice. The first and second depend much on the *attention* given to what is to be remembered; the third on the number, variety, and arrangement of the associations by which it may be recalled. There are minds on which most impressions are so slight that they are soon forgotten. Others who have learnt and retained much, do not remember

things at the right time. Few have memories so quick, retentive, and ready, as not to need some special culture; and there are none whose memories may not be improved by attending to what is most important, and forming associations to aid recollection. Artificial Memory is the use of arbitrary arrangements to aid in recalling dates, words, and facts which have no natural connection. They are found easily, when distributed in various localities on a page or a wall. Such connections are occasionally of use for a time, but natural connections are more lasting, and are on every account to be preferred when attainable. There seem to be some varieties of Memory—a special aptitude for remembering words, or numbers, or facts, or arguments, or voices, or faces. There is some difference in natural susceptibility; but most of the differences in Memory are to be attributed to the degree of attention given to various objects, and to habits of observing and thinking.

4. The connection of Memory with the Brain is not different from that of other Mental Faculties. It is close, constant, and utterly incomprehensible. Concussion and inflammation of the Brain will prevent the exercise of Memory, for a short or a long time, partially or entirely. Cold and fatigue have a similar influence. One language may be lost and another retained; one group of facts will pass from the mind while another is preserved; names may be forgotten, and objects remembered. These differences may result from different *degrees* of *mental* power. A better mental condition is required for some remembrances than is needed for others, as a more vigorous state of mind is necessary for the solution of difficult problems, or the production of superior works. The failure of memory is among the earliest signs of old age, and of the progress of some diseases. It has been conjectured that traces are made on different parts of the Brain, that these are sometimes

preserved and perceived, and sometimes effaced or covered over. But such conjectures have little if any evidence or use. They can only apply to a few remembrances; and none, as known in consciousness, are like anything that the microscope shows of the nerves. The health of the Mind and of the Brain are closely connected; as disease increases in the Brain, so sometimes feebleness and disorder increase in the Mind.*

* Animals receive and retain impressions as well as men, but it is not evident that they have a similar knowledge of the past. It may or may not be so. The past often influences the present, without any thought or belief. Men know the past, measure it, reflect upon it, find in it a *reason* for their *beliefs*, as well as causes of nervous impressions and of tendencies to muscular movements.

CHAPTER III.

ABSTRACTION.

1. ABSTRACTION, in its general signification, is the *drawing away* of any one thing from another; and it is *real* when objects are separated, *mental* when there is a separation of thoughts. Many objects and many thoughts, first presented to the Mind in union, are afterwards regarded separately. This may be without choice, or in consequence of choice; and the Faculty of abstraction appears whenever that is thought of alone, which has been presented in combination. Involuntary abstraction takes place, when the same thing is often presented in many different combinations; and voluntary abstraction, when attention is given earnestly and repeatedly to that which is to be separated. When many similar objects have been seen, that in which they are like will be thought of, while that which is peculiar to each will be forgotten; the former being often seen, the latter, it may be, but once. Only a portion of what is visible is seen, and only a portion of what is seen is remembered, more or less as it is seen often or seldom, with or without attention. One tree is seen to be like another, one animal like another; and the name first given to one is extended to others, because of partial resemblance. Many objects are thus associated in a class without a previous separation of their agreements. Abstraction is not necessary for all *classification*, but it is for all that is accurate and extensive, since without it objects will be brought together which have

no common nature. In a series the first may be like to the second, and this to the third, and so on to the end; but the first and last may be wholly unlike, and have nothing common but the name. In this way words acquire new significations; for as objects change, so must the meaning of names be different. Definitions are made by abstraction; and they are requisite, that all like objects may be included in the class and all others excluded.

2. The separation of what is *common* to many often requires the voluntary attention, which is always needed for the separation of what is *peculiar* to a few. This is often desirable, and can be obtained only by special attention. We have to separate ideas from ideas, and also beliefs, emotions, and affections, from their frequent accompaniments, in order to secure right thinking and feeling. Without this, things frequently together will be supposed to be always combined, though they have no natural connection. Great value would not be so generally attributed to old pictures, old manuscripts, old china, old customs, if what is really precious in these were *separately* regarded. Many quite useless opinions and practices are deemed very important, because they have been often found with the useful, and the cause of their usefulness has not been separated in thought. Without the abstraction of some things from others, there would be few discoveries in Science or inventions in Art; for only *parts* of the *wholes* which have been presented have many resemblances, or can be used in any new combination. Voluntary abstraction is requisite for all Generalisation. What is first regarded with one or a few objects, is thus extended to many or to all.*

* Involuntary abstraction is within the capacity of animals, and there are signs of this in their actions; but there is no evidence of the *voluntary abstraction* of which men are capable, and which is requisite for human progress.

3. Abstractions in thought have many advantages, being free from disturbing associations, and leading to large generalizations; but they have their disadvantages. To most minds they have less interest, to all they are less affecting and impressive, and with all there is some peculiar liability to error. The absurdities which have been maintained in every age, by men of much intelligence, show the difficulty and danger belonging to abstract speculation. The helps and correctives of common thinking being absent, there is no limit to the extravagance of what are called *logical*, though unreasonable, deductions. For clearness, steadiness, and correctness of thinking, it is necessary often to turn from the *general* to the *singular*, from the *abstract* to the *concrete*. Circles may be thought of, without the thought of one having a certain magnitude; and mankind, without the thought of any one man or woman; but the thought of some circle, or of some single person, is often desirable. And so with all General Ideas. Both the abstract and the concrete modes of thought, the general and the particular, should be combined, or there may be the greatest error when there is supposed to be greatest certainty.

4. Voluntary Abstraction is made either by looking at many different things, which agree only in that which is to be regarded, or by fixing attention on what we would consider by itself. Without this abstraction and separate consideration, our views of objects cannot be complete, and we are liable to perversions of judgment and feeling. That will be regarded as true which has no evidence, that as beautiful which has no beauty, that as precious which has no worth, that as important which has no influence, that as right which is wrong, and that as wrong which is right. Abstract thinking is not always required; but some exercise of Abstraction, in the separate consideration of things presented to us in various combinations, is requisite to a just

appreciation of most objects. The endless diversities of taste and judgment, in respect to the same objects, result in great measure from the different associations which exist in men's minds. As these vary, so do opinions and sentiments. If objects were sometimes regarded by themselves there would be more general agreement. These are advantages of Abstraction, to be added to its use in Classification, Generalization, and Invention.*

* Classification and Generalization are rarely referred to as mental Faculties, but they are among the most common and important mental operations. Classification is the making classes of many single objects, or the referring any single object to its proper class, a class being a collection of similar objects. Generalization is simply the making general—the taking an idea, a term, a statement, from one object, and extending it to many, on account of their seen or supposed similarity. Classes cannot be made correctly unless the points of agreement are known, and this requires a degree of abstraction. Some classification is made without abstraction, by reference to one standard or *type*, with which all have some likeness, though not the same; but the selection of a *type* seldom, if ever, precedes the formation of a *class*. What should be taken as the type of the class cannot be known till the whole class is known, and then the definition is gained by abstraction. The large class of *animals* contains all who have an *animal* nature, and the smaller class of *birds* those who have in addition the common nature of birds. The *characteristics* of a class do not include all the common properties, but the more important, from which others may be inferred, and which are sufficient to distinguish the objects of one class from another. These properties are usually given by the name of a large class, with the marks which separate one smaller class from another. Thus any *species* is defined by the mention of the *genus* and the *differentia*. The *nominal* essence of an object is that which it must have, to receive a certain name and belong to a certain class. The *real* essence is that from which other properties may be deduced. The aim of Scientific Classification is to *find* the classes already made in Nature, and not to *form* groups for human convenience.

CHAPTER IV.

IMAGINATION.

1. IMAGINATION is the power of producing new combinations of thought, with some purpose. As in *abstraction* we regard separately what before was united, so in *imagination* we unite what before were separate. Many fresh combinations of thought result from involuntary suggestion, and depend merely on Memory and Association. Some of these have special names, and are referred to special faculties; as Fancy, Wit, Humour. Fancy supplies similitudes of every kind for illustration, ornament, and amusement, and is said to be rich and various. Wit presents the striking but less obvious agreements which may be found in dissimilar objects, and is described as ready and sparkling. Humour respects the resemblances and contrasts which belong chiefly to human life and character, and may be coarse or refined, gentle or severe. These and other new combinations of thought are often involuntary; but they depend more or less on habits, produced by the course of thought often chosen. Imagination is always voluntary, there being the selection of certain thoughts, their arrangement, and the formation of some new mental representation.

2. The exercise of this faculty is not restricted to what are commonly called works of Imagination, fictitious compositions, but is of universal use. Some persons in con-

versation or discourse give only the combinations of thought previously received, with some slight difference in connection and expression; while others produce abundantly those which are fresh and original. Some in the business of life can do well only what is exactly like what has been done before, and are at a loss in new cases and circumstances; while others readily see what is to be done, and do it. Precedents and precepts alone give no sufficient guidance in human affairs. They supply the principles, which must be taken away from some cases and applied to others, partly like and partly unlike. Success in all pursuits requires some instruction and experience, but also the new combinations of thought, which are formed by Imagination and tried by Reason. The use of Imagination in Science is chiefly in the invention of Hypotheses as a temporary aid to thinking, and in devising the experiments and observations by which the Hypothesis may be proved or disproved. In all inventions the *idea* must precede the *reality*. Imagination has its place in all departments of Literature, in Biography and History, as well as in Romance and Poetry. All kinds of literary composition require the *selection* of what is suitable; for success depends both on what is brought in, and on what is left out. Then there is the arrangement of parts in the best order, with proper transitions; and finally the combination of all by such connections as shall give a unity to the whole.

3. Biography and History will be injured by the exercise of Imagination, if actions, events and statements, are introduced without proper evidence; but they will also be injured, if the additions are not made which are requisite to give the completeness, life, and reality, without which narratives have little interest, and furnish no sure ground for inferences respecting the conduct and character of individuals or nations. Frequently men are without proper

feeling, and judge wrongly, because of the absence of colour and detail in what is presented to their minds. Insensibility is sometimes a want of Imagination. In Poetry more than information and persuasion are sought for. Metrical language is used to express and awaken emotions and affections of every kind; and one end of Poetry being to please, a measure of ornamentation is proper, which would be improper in prose composition. The kind of Truth which is generally expected in prose, is never expected in Poetry. Some *truth* is required, but it may be *general;* and this may be better presented in connection with imaginary persons and events. Many Prose compositions are in this similar to Poetry. Dramas, parables, and fables—the whole literature of Fiction, which has done so much for the instruction and improvement, as well as for the amusement and recreation, of mankind—supply endless examples of the province and power of Imagination. So all the Fine Arts, as well as the useful, proceed from some new combinations of thought, some exercise of the Imagination, which thus ministers to the wants, increases the enjoyment, and contributes to the improvement of men.

4. We cannot imagine anything entirely different from what we have experienced. In Material works we can only take the elements and combinations which Nature supplies, and make of them new forms and combinations; and so it is in all mental operations. Our power in both is indefinitely great, but within certain limits. We can only diminish and enlarge, separate and combine. As a few material elements are sufficient for all the objects of Nature and Art, and a few letters for all the words of many languages, so a small number of simple Ideas supply all that is needed for all the combinations of thought found in history and philosophy, in science and poetry. Imagination may be exercised for the best purposes or the worst; to improve the

implements of industry, or to make more destructive the instruments of war; to produce scenes and characters which shall delight, elevate, help to all that is good; or those which shall defile and degrade, and draw to all that is evil. We can always imagine something different from what we see, and often something better. When the *ideal* is taken instead of the *real*, the gain is small, and the loss great; but if the *ideal* is used as a help to *real*, its influence is both pleasant and profitable. We think of something better than we are or have, and then seek to make the ideal real, to become and to obtain what we have imagined.*

* Animals generally act according to *instinct*, and do the same things, whether useful or useless. Some changes of conduct are observed in them with new combinations of objects; but these are only such as occur in human beings, without any reflection, simply through involuntary associations.

CHAPTER V.

JUDGMENT.

1. JUDGMENT, in Pure Logic, denotes either a mental faculty or its product, and refers only to Propositions, and their relation one to another. It has no respect to the Truth of propositions, except as the *subject* in one way contains the *predicate*, and in another way is contained by it; or as one *proposition* is contained in another, or follows necessarily from it, or is contrary to it. But in common usage Judgment respects chiefly the Truth of propositions, and generally those that are but *probable*. We *judge* that a witness speaks truly, but not that he speaks distinctly; that it will be wet to-morrow, not that the sun will rise. According to this usage, Judgment is the faculty which appreciates *probable* evidence and applies principles. It is spoken of as *sound* or *weak*, as it does this well or ill; as *quick* or *slow*, according to the time required for the estimate of evidence; as *calm* and *cool*, when free from disturbing influences, external and internal; as *acute*, when it discerns slight differences; *profound*, when it regards what is not obvious; *comprehensive*, when it considers all the evidence. While there are great natural differences in the *judgments* of men, as in all their faculties, the most important result from discipline and habit.*

* All *propositions* are said in Logic to express *judgments* on a comparison of thoughts or *conceptions;* but *primary* judgments respect *objects* and express *intuitions*, as, I see, I hear, I am, I think, I feel. When

2. Primary judgments are Intuitions, the secondary are Convictions. The truth of propositions which express what is believed, can be shown only by referring to the *evidence* of various kinds by which *belief* is produced. These evidences are manifold, and may be concurrent or contrary. In general Evidence consists of two parts, one respecting what any *object* appears to be, considered by itself; and another respecting the *class* to which it should be referred according to prior experience, or some *principle* of reasoning. The judgment formed respecting any stone or plant, any person or event, is partly determined by what is known of these *objects* singly, and partly by what is known of the *class* to which the object is referred. In both of these parts there is a liability to error, and occasion for diversity of judgment. There are different *positions* from which the same object is regarded, and so there are different aspects presented; more may be *known* by one person than by another, and that which is most *regarded* by one may be less regarded by another. If there are not these differences in the present view, past experience may differ, and on this account the *same* object may be referred to *different* classes. If the object be considered to belong to one class, a certain inference

intuitions cease, propositions will express thought and belief. All propositions, therefore, may be considered as the expression of thought and belief; but *thought* refers to some *objects*, and *belief* to their relation. If we say the sun shines, we do not speak of our *ideas*, but of the *sun* and *light* as real objects. Statements may be made respecting only *ideas;* but all other propositions refer to *objects*, and are true or false, as they agree or not with these objects and their relations. What is true of the Idea, is true of the Object only when they perfectly agree. Primary Judgments express what is directly perceived, and their truth can be shown only by referring to the occasions when the object is present, and to the conditions of a right intuition. If the *subject* of the proposition is a whole, of which the *predicate* is a part, this may be evident on inspection. Such judgments obtained by mere analysis are called *analytic*, all others being *synthetic*, something being put to the subject because *believed*.

will follow; if to another class, then the inference will be different, it may be contrary. The class to which an object properly belongs, depends chiefly on the *number* and *nature* of its resemblances; but it is commonly referred to the class which is *nearest* and most *regarded.* Some judge all things according to their own limited experience, estimate all men by themselves or the few known personally, while others judge according to the larger experience of men in general. Sometimes the *smaller* experience gives the surer rule, the cases being more *similar;* and sometimes the *larger* experience is to be preferred, this showing the more *constant* connections. Whatever is *near* seems to us to be *large,* and properly affects our feelings more than what is remote. But *distance* does not so affect the value of *evidence.* This should be estimated according to its real nature, and not according to prejudice, or party, or passion, or personal interest. Propositions may be affirmed as principles, which are either untrue or inapplicable. There must be liabilities to error when knowledge is imperfect, and the *right* expectation may prove *wrong* in particular cases. Very improbable things occur every day. But by attending only to what should regulate judgment, most serious mistakes may be avoided. There are matters on which we have no occasion to judge, and where all opinions are mere guesses; but where there is need of judgment, some kind of evidence is available.

3. We must use our own judgment, as we must use our own eyes; but we should regard all evidence, the indirect as well as the direct. Often there is only *indirect* evidence, and this is often the best. There are many things that can be known by us only through the testimony of eyewitnesses, and many that can be known only as we use the judgments of others. Our own experience shows us the value of some testimonies and judgments; and our own judgment must decide the comparative value of conflicting evidence, both

when the judgments of others differ, and when the facts we can see and the arguments we can appreciate seem to lead to one conclusion, while more competent persons have come to a contrary conclusion. If to one free from partiality, it would be much more probable that we were wrong and others right, than that we were right and they wrong; then it must be so for us. Our own judgment directs us to accept the judgment of others as our own; or we should judge from a part of the evidence, and it may be a small part, instead of from the whole. It cannot be the duty of any man so to judge for himself, as to choose ignorance and error.

4. The greater part of our knowledge is *inferential*, and it is not of less value because we are liable to err. There are many Fallacies against which we have to guard. What is really *inferential* often seems to be *intuitional;* what is only *probable* is taken as *certain;* what is true of *some* is supposed to be true of all; what is *conditional* is regarded as *unconditional;* and a *part* of the evidence is accepted as the *whole.* The ambiguities of language in the signification of terms, and the sense of propositions, are among the most common occasions of wrong judgment; and where that is assumed which should be proved, the more perfect the reasoning the more erroneous the conclusion. Beliefs, as well as thoughts and feelings, are much influenced by associations, and are determined by the evidence which is most regarded, whatever that may be. As the positions and preferences, the dispositions and habits, of men vary, so do their *beliefs.* Experience will show not only the nature of objects, but also the correctness or incorrectness of our judgments; and so we may learn which of these are to be trusted and which are to be distrusted, and in what measure.

5. That Judgment is often according to inclination rather than evidence, all will admit. Inclination leads us to attend

to some things more than to others, to look to what is most agreeable in any object, to refer it to the class most liked, to regard chiefly the testimonies and judgments of those who agree with us. Indolence commonly indisposes to the labour requisite for obtaining and appreciating the entire evidence. In all practical questions, unless there be a supreme and constant regard to what is true and right, desires and aversions will improperly affect the consideration given to one side and another. Convictions respecting conduct increase or decrease, as there is corresponding action or the contrary. They who follow *duty* are more and more sure that it is *right*, while neglect lessens the sense of obligation. Most persons are ready to believe that there are reasons more than they remember or know *for* what they like, and *against* what they dislike. This is possible; but it is more probable that the unknown reasons are on the other side, *against* what is liked, and *for* what is disliked. It is more easy to believe when those with whom we have much sympathy believe as we do, and it is not easy to receive and retain convictions without this aid. Except in purely abstract matters, *evidence* is connected with various *feelings;* and as feelings of every kind are much influenced by *sympathy*, so are *judgments.*

6. If at any time Belief should be according to Evidence, it should be always so. If before forming a judgment all attainable evidence should be used, when more evidence is offered this also should be considered. The judgment which respects a part of the evidence, is to be exchanged for that which respects the whole. It does not follow that accepted conclusions are to be continually revised, and the foundations of belief often disturbed for re-examination. This would be fatal to the use of knowledge, as well as to its increase. But there are occasions when it is proper to consider fresh evidence, and even to reconsider

what was before known, previous assumptions being disproved. The old is not to be disregarded because of the new, nor the new because of the old. Both should be combined, and estimated according to their worth, not according to the time when they were known. What is confessedly partial evidence should not exclude more, and so prevent confirmation or correction. To refuse all reconsideration of judgments once accepted and used, is to prefer our own opinions to Truth; to preclude all growth in wisdom; to make a return to right thinking and acting impossible to those who have once erred. Evidence which is only *probable* should in many cases determine conduct, as much as the most *certain;* but it should not, therefore, be considered to be certain. Proper certitude must always be according to the degree of evidence; for more is unreasonable. Previous assent can be no proof, unless infallibility be assumed. It is never desirable that there should be *indifference* to conclusions, and this is often impossible. But it is desirable that there should be always a supreme regard to truth, a desire to judge rightly, whatever the conclusion may be. A man cannot be indifferent to the result of examining his affairs; but if truthful and honest, he will wish to know what they *really* are, not to think himself richer or wiser or better than he is.

7. He who should disregard Evidence because it is only *probable* would know and do little, while he would lose and suffer much. The attainment of what we desire, and the avoidance of what we fear, depend on our doing what is only *likely* to ensure safety and success. All things great and good accomplished by men, for their own welfare or that of society, have come from a right use of *probable* evidence. According to the nature and position of the objects known, must be the nature and measure of their evidence. All that is beyond our present Consciousness is beyond the

limit of Intuition, and all that is beyond our past Consciousness is beyond the limit of Memory. If we go beyond these narrow bounds, it is by Judgment or Reason. Some things are known with absolute certainty, others with high probability, others with less, and some with mere possibility. These diversities of evidence correspond to the diversities in the objects known, and to the various capacities and wants of our minds. Truth is ever better than falsehood; but of some things ignorance is better than knowledge, and of others probability is better than certainty. The best *knowledge* is the reward of patient industry, and the best *character* is the fruit of probable convictions. It would be no gain, if we were certain of all things; but it will be great gain, if Belief is ever according to Evidence, and Conduct according to Truth. Practical Judgment respects the value of the *ends* sought, and the preferableness of the *means* to be used. The worth of objects, and the likelihood of success, can be known only by instruction and experience. The testimonies and judgments of others must be considered and used, if we would escape all the ill that may be avoided, and obtain all the good that may be acquired. When there is as much evidence as, from the nature of the case, can reasonably be expected, a sound judgment will not be shaken by objections which cannot be answered, and puzzles which cannot be explained. These belong to the limitation of human intelligence, and show that it is not infinite; but not that it is to be distrusted.*

* Animals show some signs of deliberation, hesitating before acting; but this may be the result of a balance of impulses, till one prevails. There is no proof that they suspend deciding because of reflection, that they consider evidence, and discern comparative values.

CHAPTER VI.

REASON.

1. REASON, as a Mental Faculty, is the power of knowing one thing through the prior knowledge of another. That *by* which—not merely *with* which—something else is known is called *evidence*, or a *reason;* and that which is known thereby is an *inference*, or *conclusion.* Thus we perceive and give *reasons* for what we believe, the *reason* being that which on reflection is seen to be a proper and sufficient *cause* of the consequent Belief. The terms *Reason* and *reasoning* have been variously used; but generally and most properly every exercise of Reason is called *reasoning*, and all *reasoning* is attributed to Reason. There might be intuitions, thoughts and remembrances, of every kind, and nothing more. Thus there would be some knowledge of the present and past. But the knowledge of the present beyond Consciousness, and that of the past beyond Memory, and all knowledge of the future, require another capacity. Reason is the faculty to which we owe nearly all our knowledge of past, present, and future, advancing from the near to the remote, from the visible to the invisible. Association sometimes recalls both *reason* and *inference*, but it sometimes reproduces *belief* alone. In the former case there is *reasoning*, but not in the latter.

There are various kinds of *reasoning*, as there are different kinds of *inference*, different exercises of Reason; but there is one Faculty of Reason to which all may be referred. Reasonings differ as they respect natural or necessary con-

nections; as the conclusion is larger than the premises, or less; and as it is a primary process of reasoning, or the result of a generalization of such processes. These are the more important distinctions.*

2. Inferences differ according to the subjects on which we reason. Natural connections, learnt by experience, supply most of the subjects of reasoning. We *believe* that what is now, was some time before; and that what has been

* Reason respects what is mediately *known*, and through this what is *done*. Instinct respects what is *done*, and is the cause of *action* without *knowledge*. It is an innate tendency to do, without Reason, what Reason would prescribe. Instinct is sometimes improperly confounded with Intuition. Understanding, as commonly used, involves some reasoning. According to its etymology it refers to more than *superficial* knowledge, including what is *remembered* of classes, or is *inferred* respecting causes and reasons. We *understand* a man's conduct when we know his motive, and see the agreement of action with character. We *understand* the structure of a plant when we know the uses of its several parts, and the causes of its peculiarities. We *understand* statements, and arguments, when we know *fully* their meaning and connection. There is another use of the term Understanding (Verstand) in which it is distinguished from Reason (Vernunft). All knowledge is referred to the former, which is not more than an enlarged and modified representation of Experience, and agrees with what is known intuitively; while all that is more than this belongs to the latter. Thus all we know by Intuition and Memory, by reasoning from particulars to particulars, or by syllogistic reasoning, are attributed to the Understanding; while inferences respecting *substance*, the *soul*, the *universal*, the *necessary*, the *infinite*, the Divine, are attributed to Reason. It is important to observe that only some objects of Belief can be fully represented, and shown to agree with intuitions; but this does not affect the nature and certainty of inferences, and show that some should be attributed to the Understanding, and others to the Reason. That which belongs to the Understanding includes more than experience, and cannot always be fully represented and verified; and that which is attributed to the Reason is confirmed by generalizations. Noumena are permanent realities, known by Reason (*νοῦς*). Phenomena are *appearances*, which may or may not be *permanent*. The Understanding denotes either the whole of human intelligence, or the higher exercise, or a part of this.

will be. We *believe* that what has been observed in some objects, will be found in others like them. Our first knowledge is a *reason* for that which comes after, and is *inferred* from it. There is great diversity in the *extent* both of reasons and inferences; and it is evident that our belief is stronger when the experience is large and the inference small, than when the experience is small and the inference large. These beliefs come at first as natural consequences, but they are perceived to be *reasonable* as well as *natural;* and still more so, when we pass from single cases to reflect on the one *principle* of reasoning which appears in connection with many experiences. To the lessons of Experience we owe the use of Testimonies of every kind. On these all the business and comfort of life are dependent, and the greater part of all knowledge, common and scientific. There are *testimonies* which have often been found to be false, and others which have never been found to be untrue. They have never been known to deceive, and human nature must be entirely changed if they should prove untrue. There are no laws of Nature more constant and certain than some which respect human conduct, and therefore trust in some Testimony has all the strength that can be given by the largest Experience. In rightly receiving Testimony there must always be an exercise of Reason; for without this there can be no distinguishing between the good and the bad.

3. Necessary connections are shown in Experience, and could not otherwise be known; but a very small experience is sufficient for the largest inferences. Reason gives the universal conclusions of Arithmetic and Geometry, of Metaphysics and Logic. Many experiences are requisite when the connection is known simply as Natural, but one is sufficient when the connection is known as Necessary. Of some things we know only that they *are* what we find them to be; of other things we know that they *must* be, and could

not possibly be otherwise. These Convictions are not less sure than those of the largest Experience respecting Nature, but they have another origin, and are of another kind. All that is known merely as *natural* may be in *thought* reversed; but what is impossible for *thought*, is equally impossible for *belief*. The regularity of what is natural, is a reason for belief in one way; the peculiar properties of what is beside the natural, are reasons for belief in another way. Both kinds of Convictions are alike natural and reasonable; and both are constant and universal, if Reason be exercised on the different objects.*

4. Reasoning is described as Inductive and as Deductive. In the former something is plainly added to the premises, as in the general conclusions of Natural Science. In the latter the conclusions are but a part of one of the premises, shown to be included in it by the other premise. In the *perfect* Inductions of Logic there is no reasoning, but simply the substitution of *one* statement for many. But in all *reasoning* there is some additional knowledge, in Inductive and in Deductive. There is no inference if the conclusion is merely a part of one of the premises; but the other premise, which asserts *inclusion*, also makes some *addition*, and thus the conclusion becomes inferential. Induction and Deduction belong to all departments of knowledge, though not in the same measure. Some sciences are chiefly inductive, as Chemistry and Physiology; others chiefly deductive,

* We are asked by some to distrust our strongest *convictions*, because they may be mere *associations*, made by our ancestors and their animal progenitors. It is therefore said that 2+2 may become 5; that two right lines may include a space; that beyond certain limits there may be no space, and before a certain period no duration; that the world may have come without a cause; that contrary propositions may be true; that there is no real and permanent difference between right and wrong; that men have no more moral nature than brutes, all being of one family. They must be very credulous who take such opinions as proofs of superior intelligence.

as Geometry and Mechanics. But all must begin with the knowledge of single objects, and advance inductively to generalisations; and the general conclusions already established are employed, deductively, for the discovery of new truths, and the application of old.

5. The difference between what is called Spontaneous reasoning, and what is called Reflexive, is important. The first exercises of Reason, as of all the mental faculties, respect *single* objects. As *thoughts* become *general*, so the processes of *reasoning* are generalised. We may know by inspection that the line A is equal to the line B, and the line B to the line C; and from these two comparisons we infer that the line A is equal to the line C. No other premises are required for this conclusion, and nothing can make it more clear and certain. This is Spontaneous reasoning. From this and similar cases we generalise, and obtain the universal truth—Things equal to one and the same are equal to one another. The particular proposition is not inferred from the universal, but the universal from the particular; with the same certainty in some cases, but in others with less. Having reached by reflection a universal proposition, we can exchange the Spontaneous form of reasoning for the Reflexive, and say, Things equal to the same are equal, A and C are such things (being each equal to B), and therefore A and C are equal. The two modes of reasoning are equally correct and conclusive; the former must precede the latter, and cannot be proved by it. It is the same with all reasoning. From single facts we draw inferences, prior to any generalisations. In all cases particular propositions are first known, and particular conclusions are first inferred; and often the evidence for a particular conclusion is greater than for a general. Only in what is necessary can it be said, that what is true of one is true of all, and that what is not true of all is not true of

any. What is proved of one circle is proved of all, but what is true of one tree is not true of all.

6. Reflexive reasoning has the form of a Syllogism, which takes the precedence of other forms because of its universal application. It is never the first mode of reasoning, nor is it always the best. Other modes are often more simple and clear, and equally conclusive. Many more axioms may be formed which, like those of Euclid, are simply generalisations of particular arguments. By their use all reasoning is put into the Syllogistic form, and may be tried by the rules of Syllogism. There is an axiom for each of the figures of Syllogism, and an axiom that comprehends all. But none are requisite as proofs. The axioms which are easily gained from the simplest cases of reasoning soon become familiar, and are useful for the recognition of the same principle in complicated cases. Syllogisms have also the advantage of bringing out into full consideration the principles implied in other forms of reasoning; but they give no certainty to what was uncertain. In some cases the truth or untruth of a *general* proposition will be at once admitted, having been often seen, when that of a *particular* proposition is concealed by prejudice, passion, or some other cause; and then the syllogism will secure assent. But in other cases the truth or untruth of a general proposition is not so readily perceived, and then the syllogism is likely to mislead. The form of an argument can add nothing to its worth. If the premises are uncertain, so is the syllogistic conclusion; and only when both premises are certain is the conclusion certain. Spontaneous reasoning always precedes Reflexive; but when the principle has been gained in clear and simple cases, it is usefully applied to those which are obscure and complicated.

7. Knowledge of every kind depends on the power of the Mind which knows, and the properties of the Object which is known, and therefore includes both what is subjec-

tive and what is objective. The Axioms of Natural Science, Mathematics, Metaphysics, and Logic, are the most general propositions that can be formed. They are Laws of Reason; for they state the way in which we think and believe, and show something of the nature of Mind,—of the Faculty which existed before it was exercised, and continues when not exercised, without which there could be no inferences, and according to which inferences follow. But they are also Laws of Objects; for they state what is known of the things respecting which we reason. What is *objective* in such statements is very small, but is not the less real. If we do not accept the evidence of Consciousness to the *objective* reality, we have no ground for any *subjective* reality. If we do not believe that the perceived properties of mind and matter, of numbers and magnitudes, are *real*, we should not believe that we have any perceptions or thoughts, or indeed any existence, material or mental. This universal scepticism is impossible; and partial scepticism always maintains some truths while it rejects others, though the evidence is equal, and often the same.

8. Reason and Faith are often referred to as two different sources of knowledge, and much confusion of thought has arisen from the various ways in which these terms have been used. In common usage Reason is simply an intellectual faculty, and respects *knowledge* alone; while Faith is more comprehensive, and includes also some desire and choice. Faith, as a state of mind, is the same as Trust, which is always a practical principle, including *belief*, but never consisting of this alone; and generally, not always, it respects *persons*. We *believe* some person to be able and willing to guide and instruct, to help and protect; and we *feel* and *choose* accordingly. This is Faith. We have faith in such persons; we trust them by believing what they say, and by choosing to do what they direct. There cannot be any

opposition between Reason and Faith when so understood. Faith must come from some Belief, and this from some exercise of Reason. It is so universally. Faith in a person is a *reason* for believing what he says and doing what he directs, and this often leads to further knowledge. But the first Faith is founded on some *reason*, if it be at all reasonable; therefore the foundation of all Faith must be apprehended by Reason, and Faith itself is the proper fruit of Reason. According to the common use of the terms, there can be no faith that is *above* Reason, except that which is without evidence; and only that which is unreasonable, contrary to all *evidence*, can be *contrary* to Reason.

9. When Reason and Faith are placed in opposition, both terms are used in a peculiar sense. Reason stands either for the principles of human intelligence, or for one portion of evidence. That is sometimes said to be *contrary* to Reason, which is contrary to Logical principles; but nothing can be intelligently received that is really *contrary* to these. All that is received must be *according* to them, and nothing can be said to be *above* them; for from them alone nothing is ever learnt. Reason is also sometimes put for the *evidence* which is equally open to the Reason of all—the evidence given by the nature of Man, the constitution of the world, the common course of events. Much evidence is given thus, but not all. Many things can only be known by Testimony and Authoritative teaching. Reason stands for one portion of evidence, and Faith stands for the other portion—that which depends on the trust given to one or more Witnesses, to one or more Teachers. These two sources of knowledge are found in all business, history, and science; though they are not distinguished as Reason and Faith. In many subjects there are conflicting evidences, and some truths certainly known have opposite evidences, the evidence for them exceeding that against them. It is no reason for rejecting

a statement, that it is *contrary* to some evidence, and still less is it to be rejected because *above* or beyond some evidence.

What is called Reason is one portion of evidence, and what is called Faith is another. That something should be learnt from one that could not be learnt from the other, is what all would expect. Where there is conflicting evidence, the inferior must yield to the superior. But there may be difference and no contrariety, and apparent opposition that is not real. Every science has its own truths, every country has some peculiar objects, every age has events and characters different from all others; and these can be known only by the various evidences proper to each. No one kind of Evidence can be rightly described as belonging only to Reason, or only to Faith; for Reason has to do with all Evidence, and Faith is the proper result. The common opposition of the two leaves the impression, that Belief is required without Evidence, and that Faith is good whether the Object be worthy or unworthy. But Belief without *reason* produces all error and superstition, and Faith thus supported is injurious and destructive. Trust, submission, and obedience *rightly* directed, conduce to all that is good; but *wrongly* directed, they occasion and increase all that is evil.*

10. Reason and Revelation are often distinguished and opposed, with the same impropriety. Reason is put for what is known apart from Scripture, and Revelation is put

* When the judgments of children are contrary to those of parents and teachers, it is never said that Reason and Faith are different and opposed. The evidence that is open to all men respecting sun, moon, and stars, is different from that which only men of science can understand; but the acceptance of the former, and the rejection of the latter, would not be attributed to Reason. Reason is like vision, a receptive faculty. As the Eye receives *light*, without which it is useless, but gives none, so Reason receives *evidence*, without which it is useless. If the Eye is not used, nothing is seen; and if Reason is not exercised, little can be known. In like manner all mental Faculties are receptive. Perception and Memory receive and retain knowledge, but of themselves give none.

for what is learnt from Scripture. Reason is the faculty by which we are able to read the pages of Nature and Scripture, and learn what they declare and reveal of the Divine will and character. All knowledge of God is a *revelation*, in whatever way it is given. Without Reason, no Revelation would be possible. Nature shows something of God, and has exhibited the same lessons from the beginning to all men. Scripture repeats the lessons of Nature, and is also the record of other lessons, first given to a few, and through them communicated to others. Religion is based on Revelation, that of Nature and of Scripture; and is either the knowledge thus given, or the corresponding dispositions and conduct. Interpretations of Scripture and of Nature have often been contrary, and the right interpretation of one has led to the right interpretation of the other. Instead of the common divisions of Religion into the Natural and the Revealed, it would be more correct to speak of the Revelation of Nature and of Scripture; and of Natural Religion and Scriptural Religion, the latter referring to what is recorded in the Bible.*

* It has been strangely said that, while Sense and Understanding belong to the individual and are *personal*, Reason is *impersonal*, and is but *one* in all men, and in God. The error comes, with many others, from confounding *subjective* knowledge with *objective*, and the *sameness* of *similarity* with that of *identity*. Sensations, primary perceptions, and ideas, belong entirely and only to the individual, subjectively and objectively. The *act* of seeing and the *object* seen are thus *personal*, belonging to the same person; but most secondary perceptions and inferences belong to the individual only *subjectively*. The *objects* thought of are common to all intelligent beings. There is one sun and moon for all, one globe and law of gravitation; and they do not change as men's minds and bodies do. All mental faculties are *personal*, as belonging to the *personal* Self. Reason belongs to the *individual*, with every other form of intelligence. The Reason of one man can be only *like* that of another, and human intelligence can only partially *resemble* the Divine. The *mind* knowing is always *personal;* the *object* known may be either personal or impersonal. As the *minds* are many, so their *states* cannot be one.

DIVISION VI.

SUPPLEMENTARY.

CHAPTER I.

ASSOCIATION.

1. THE association of Ideas is often mentioned, but this is only one class of similar connections. There is a more general Law of the widest extent and the greatest importance, which is to Mind what the Law of gravitation is to Matter. All mental states of which we are conscious, and probably the unconscious states also, tend to become in some respects *more like* some previous state. Thus there is ever in the *present* some reproduction of the *past*, and the *future* will be some reproduction of both. When one object or thought suggests another *similar*, there is plainly the renewal of a former state of Mind; and it is the same with suggestions of *contiguity*. When a word suggests its meaning, a previous combination is reproduced, and the *likeness* of the present to the past is increased. Association is sometimes a cause of *sensation* as well as of thought. Sounds may be heard and visions seen, without any present outward cause, through the previous combination of sensation and thought.

Secondary perceptions are remarkable examples of the influence of Association. Through the frequent combination of what has been given by some sensations, with what

is given by others, we seem to hear and see what certainly we do not hear and see. Colour is an *affection* of the eye as much as sweetness is of the tongue, but through association it appears to be a *quality* of outward and distant objects. We seem to see the distance, magnitude, and solidity of visible objects, though they are not really seen. Common experience in learning to draw shows the difficulty of separating what is *seen* from what is *thought* of, but correct drawing shows that it may be done; and common experience proves that it is quite possible, to separate in thought what has been constantly combined in observation.

2. Association has much influence on *beliefs*, as well as on thoughts and sensations. Convictions of every kind are affected by it, sometimes properly, and often improperly. The *representation*, which is one part of remembrance, is regulated by associations, as all other thoughts; and the *belief*, which is the other part, is subject to the same influence. We sometimes clearly and surely remember what we cannot remember at other times, and this is shown to be a *genuine* remembrance by its independence and truth. But sometimes we *seem* to remember what could not be remembered, being unreal. Persons think they remember seeing and hearing what was not seen and heard, or saying what was never said, and doing what was never done. That which was only *thought* of, seems to be remembered as *seen* or *heard;* and that which was *purposed*, seems to be remembered as *performed.* This is an improper result of *association.* With things really remembered others become combined in *thought*, and when no care is taken to preserve the distinction they share the same *belief.* If there is a *real* connection in the objects thought of, the association may be evidence, but not otherwise. Like other occasions of error, this is no reason for distrusting our faculties, but for their cautious and proper use.

3. The convictions of Experience, as well as those of Memory, are affected by Association. Many things are believed more strongly or more fully than they would be if regarded alone, because they are combined in our minds with other things to which the stronger or fuller beliefs properly belong. Where a large experience and much similarity are the proper causes of strong convictions, these may be extended to particulars for which there is little evidence. And so where much is properly distrusted, the same distrust may be extended to that for which there is abundant proof. As likings and dislikings are extended to associated objects, so are beliefs and disbeliefs. There are proper objects for the feelings and the convictions, but these are often transferred to other objects merely by association. Persons and things are liked and disliked, without any proper cause; and much is believed and disbelieved without any sufficient reason. The belief belonging to the premise is transferred to the conclusion; the trust due to testimony is given to inference from it; they who are authorities in one subject are regarded as authorities in others. This may be either with or without a corresponding judgment as its reason.

4. The convictions of *certainty* and *necessity*, which belong to the Abstract Sciences, are sometimes transferred to the Natural objects connected with them. What is deduced from definitions is extended to objects that only partially agree with them. Conclusions are held as certain because the reasoning is certain, though they never have more evidence than belongs to the premises; and if these are wrong, the better the reasoning the worse the inference. The mere *forms* of demonstration are thought to have the *force* of demonstration, though the subject precludes both necessity and certainty. The combination of *dependent* probabilities may give an improbable conclusion, while the union of *in-*

dependent evidences, though separately small, may justify the strongest conviction. But not unfrequently the measure of belief belonging to evidences separately, is given to them in combination, without the proper increase or decrease. If nothing were really certain and necessary, nothing would be so regarded; but propositions may be so regarded simply from their associations.

5. It is important to observe that in associations of every kind, parts of a series may be left out, and the connection be maintained. An idea may introduce a second, and that a third; but if the second is little regarded, the first and the third will become combined without it. So the belief which resulted from two other beliefs, and primarily from the second, may become united to the first alone. There is a similar experience in mental feelings. The accompaniments of joy or grief acquire through association a power to please or displease, without any thought of the original cause. Desires and aversions are in like manner transferred from the objects which first excited them, to others in themselves indifferent. Means are at first valued for their ends, and signs for what they indicate; but both are afterwards prized for themselves, though utterly worthless. In bodily movements the effect of association is equally remarkable. Each movement in a series must at first be chosen, but after a time the choice of one will secure many others. Thus it is in habitual actions—talking, walking, singing, playing on a musical instrument; voluntary motions become involuntary and unconscious, automatic.

6. The advantages of association in the preservation, increase, and application of knowledge are incalculable; and the errors which it occasions may be discovered, corrected, and avoided. In the early stages of human life association takes the place of Reason, and it always gives some useful

guidance and assistance. The facility and perfection gained by practice are due to association, which always helps and sometimes supersedes present effort. The association of Ideas gives the combinations of thought most useful for the progress of knowledge and the regulation of conduct; but there is ever occasion for direction and control. Associations of Belief occasion innumerable errors, but these are not inevitable. Their *temporary* use is very great; but they require examination, that *permanent* beliefs may be according to the evidence, which properly belongs to each of several associated objects.

7. Many things have been attributed to Association which cannot result from it alone. It cannot possibly give the first knowledge of anything. That which seems to be known in one way, if known through association, must have been previously known in another way, and there must have been a frequent combination in experience. Distance and magnitude would not seem to be known by *sight*, if they were not previously known by *touch*. Association cannot change *natural* connections into *necessary*, any more than it can change self-interest into social affection, pleasure into moral approbation. It is often supposed that a mental state is analyzed and accounted for, as material substances are, when traced back to two or more antecedents; but when it may be shown that the material substance has the same *weight* as the elements, the *properties* are very different, and could not be learnt from the elements. No study of *hydrogen* and *oxygen* would ever show the nature of *water*. We can never weigh later mental states with their supposed elements, and know that no addition has been made, whatever differences appear. And if this were possible, no study of early mental states would show the nature of those which come after. In matter and in mind, the study of *antecedents* will give little knowledge of *consequents;* and the study of

elements little knowledge of *compound* objects. Intuitions will not give the knowledge of Ideas, nor will either or both give the knowledge of Beliefs. It is the same with the Emotions, Affections, and Moral Sentiments. The earlier states are requisite for the later, but they do not constitute them. Marble is necessary for the statue, paints for the picture, iron for the machine; but no study of the antecedents and elements would help much to the knowledge of the products. It is the same with all *mental* and *moral* experiences. Nothing of their nature, use, and importance can be learnt from elements and antecedents alone. The *later* and *complex* phenomena of Mind cannot be deduced from the *simple*, which *precede* but do not contain the consequents. The influence of Associations on Emotions and Desires, on Affections and Actions, both voluntary and involuntary, is similar in nature and importance to its influence on Intellectual states, and requires consideration in connection with these subjects. Habit is the result of Association, and it is impossible to overrate its importance—the help, freedom, and happiness of good habits; the hindrance, bondage, and misery of bad habits. Man has been described as a "bundle of habits." He is this, but also much more; for he can choose what his habits shall be; and there are many helps to a deliverance from all that are bad, and to the formation of all that are good.*

* The power of Association is peculiarly manifest in Dreams. These come from the uncontrolled suggestions of partial consciousness in imperfect sleep. Both *sensations* and *ideas* are then produced, with some of the *emotions* which usually follow. Most dreams respect visible objects, scenes and events; but sounds may also seem to be heard, words to be spoken, actions performed, and sufferings endured. These follow one another, as naturally suggested, in rapid succession; sometimes with a measure of consistency, but frequently without any regard to propriety, probability, or possibility. They are all imaginary, but they generally appear to be quite real; though when sleep is less complete some doubts may be felt. Dreams are sometimes occasioned by

present sensations, often by recent mental impressions, and frequently without any known cause. They are commonly wildly fantastic, contrary to all that memory and reason show when awake; but sometimes they give combinations of thought just and true, which before sleep were sought in vain. These combinations are the involuntary products of Association, for which previous thought has made some preparation. There is no agreement between the real and supposed *duration* of dreams. When really short, they may present a series of events belonging to many days. In dreams there is the absence of voluntary power, and this appears to be the cause of many of their characteristics. In somnambulism there is a partial sensibility and some power of choice; but the mental changes are involuntary. Dreams may be shown by talking and walking while asleep, though they are not remembered; and all remembrances of dreams have peculiar uncertainty. Stories of dreams are therefore to be distrusted, without any impeachment of the veracity of the relater.

CHAPTER II.

AUTHORITY.

AUTHORITY, in reference to conduct, is natural and indispensable in every family and society; and some authority in respect to *belief* is equally necessary. The two kinds of authority are very different in their nature and use, though they have often been confounded. The one is chiefly for the peace and order of a community, the other entirely for the increase of knowledge. The power and position requisite and sufficient for external government are reasons for the one, the knowledge requisite and sufficient for information and instruction is the only proper reason for the other. Conduct depends on choice, and directly affects the rights of others; but Belief cannot be commanded, and with it others have no right to interfere. Authority over belief, when sustained by power and not by evidence, cannot be for the welfare of society; for it produces only hypocrisy, indifference to truth, deception and injustice.

Belief naturally and properly is the result of Evidence, and cannot be secured by any Authority that has not this character. The belief of children is required by parents, that of pupils by teachers, on the ground of *superior knowledge;* and it is given for this reason. Such belief is natural, reasonable, and beneficial; and so universally. They who have any knowledge are authorities to those who have it not. The measure of their authority is their real or supposed

superiority in knowledge. This gives to their statements the nature of Evidence, and they are authorities only so far as they are evidences; in this degree and no further.

Statements have been divided into two classes, those respecting matters of Fact, and those respecting matters of Opinion. In the former the chief question is, the *veracity* of the witness; in the latter, his *capacity* for judging rightly. The distinction is just and important; but it should be remembered that there are *spiritual* facts as well as *material*, and that many things called matters of *fact* include inferences, while matters of *opinion* are not always uncertain. The latter are manifestly inferential, and generally admit of diverse judgments. The need of Authority in respect to Belief is at once evident, from the very little that can be known by any one directly, without the help of others. From the beginning of life to its close, we are all more or less dependent on others in all our studies and occupations. We accept authorities, whenever we trust to the testimony or judgment of others; and this trust is generally confirmed by experience, though sometimes it is corrected. Every judgment concerning any Authority rests on Experience, either that which respects the same or similar persons, or that which belongs to the common principles of human nature, of which we are conscious. If something is known of the author of any statements—his *ability* and *opportunity* for knowing what is stated—we can judge whether he is likely to *mistake*. And if something is known of his *character* and *circumstances*, we can judge whether or not he is likely to *deceive*. These things are known in part through the statements made directly or indirectly by any witness or writer, and in part through the statements of others. Many authors are best known by their works, and many testimonies by their intrinsic character.

I.

Respecting matters of Fact, the only persons who can directly testify to any action or event, are those who were present, and give the evidence of eye-witnesses. The statements of others can give only what has been believed, because of such testimony. The highest authority belongs to the testimony of eyewitnesses, if the matter be such that with ordinary intelligence there could be no *mistake;* and if they appear to be truthful, with no inducement to *deception.* A derived *authority* belongs to the *general belief* of contemporaries, when this can be attributed only to the testimony of competent and trustworthy witnesses. Much that is surely believed, respecting ancient and modern times, has no other evidence than this general belief; and under certain conditions this evidence is always true, and has never been disproved. The primary witnesses can be directly known by few; but what could easily be exposed if false, and has nothing to recommend it unless true, would not be generally accepted without sufficient evidence. There are matters in which men are never mistaken; there are characters that never deceive, to whom falsehood is impossible; there are circumstances in which none speak falsely, in which the most foolish could not be deceived, and the most wicked would not seek to deceive others. On the other hand, there are matters in which many do mistake; there are characters prone to deception, and circumstances in which merely common testimony is reasonably distrusted. The extremes on either side are known easily, but those which are intermediate present different degrees of difficulty. The truth or untruth of a testimony will sometimes appear in its style, its consistency or inconsistency; and it is judged in part by the probability of its being a relation of fact, or an invention of fancy, honest or dishonest. Evidence is multiplied, when there are concurrent independent testimonies;

and their *coincidences* are often conclusive, when separately they would be of little if any value. The same testimony given independently by two or three witnesses is universally accepted, on account of the extreme improbability of merely accidental agreement. That some testimonies are untrue is quite certain, but it is equally certain that there are testimonies which are never untrue, and the good are to be distinguished from the bad.

All biographies, histories, and narratives that do not come from contemporaries, give only the writer's judgment. Changes and additions are found in all statements that pass unchecked through several persons, and still more in those which pass through several generations. Much uncertainty must therefore belong to statements, which do not appear till long after the time of the events related. If such statements are received, it must be for special reasons. If the event, according to ordinary experience, was likely to be real, and not likely to be invented, it should be received on common testimony. But if, according to ordinary experience, it was not likely to be real, and was likely to be invented, then common testimony is not sufficient, and more is properly required. Every age and country has its own language and style, opinions and spirit; and by these, contemporary may be distinguished from later writings. But no testimonies are to be rejected, merely because they declare of one time and place what is peculiar and extraordinary.*

* The celebrated argument of Hume against Miracles—that they are contrary to Experience, while the untruth of Testimony is not—contains several fallacies. There is over-statement on one side, and under-statement on the other. Miracles are referred to without any regard to their character and purpose; and Testimony, without any consideration of its nature and circumstances. This cannot be right. The improbability of the Christian miracles is not greater than arises from the assumed absence, not in all ages of the globe, but in the previous ages of human history, of such signs of a Divine mission; and this is

II.

Respecting matters of Opinion, we receive the *judgments* of others as we receive their *testimonies*, and for the same reason. We do not need the *testimony* of others to what we ourselves can see, nor the *judgment* of others respecting that of which each can judge as well as another. But we need the *testimony* of spectators, concerning what they saw and we could not; and the *judgment* of others, concerning matters on which few are able to judge correctly. This is the inevitable condition of all, in reference to departments of knowledge admitted to be both sure and important. Sciences rest on certain primary facts and arguments, which

very much less than the improbability of a useless deviation from the course of Nature. The improbability of the Christian Testimony being untrue is, not that of *any* testimony being untrue, but of *such* testimony being untrue, from *such* persons, in *such* circumstances; and that not in one case, but in many, men living and dying for the truth. The assumed *impossibility* of Miracles has no support from Experience. They are not to be regarded as violations or suspensions of the laws of Nature, nor as *effects* without adequate *causes;* but as superhuman works attesting and promoting a Divine mission. Their reality must depend on the only evidence by which past events can be known—the testimony of contemporaries, and the continuance of effects in no other way to be accounted for. It is not contrary to Experience, that *lower* lessons should be followed by *higher*, that *preparation* should lead on to *completion*, that extraordinary *power* should accompany extraordinary *wisdom* and *goodness*. But it is contrary to Experience, that such men as the writers of the New Testament should be false witnesses; that such writings should be the fruit of personal or popular enthusiasm; that the benefits which Christianity has given to the world should come from folly or fraud. If the being of God be denied, the reality of miracles may well be doubted; but they who believe that there is one Supreme, above all in power, wisdom, and goodness, cannot think it *impossible*, but rather *probable*, that in addition to all natural means of instruction something more should be done, to give men the knowledge and help they most need; and to deliver them from the darkness and degradation, the wretchedness and wickedness of their common state of ignorance and superstition.

are as much beyond the reach of men in general, as the objects of distant lands, and the events of former ages.

The labours of a life, and more than common ability, are requisite for the independent knowledge of a single science. Sciences, if known by men in general, must be received on the ground of Authority, and this evidence is often quite certain. When many persons of high ability, after long and independent study, agree in their conclusions, this agreement is a surer evidence of truth than the observations and reasonings of any single person. When with every inducement to diversity of statement, they agree in what they declare to be the *truth*, there is the best *reason* for believing what they assert. Reason thus requires the acknowledgment of Authority. As it is with the Sciences, so it is with Commerce, Law, Literature, every description of Art, and all kinds of knowledge. A few only have the ability and opportunity requisite for independent judgment on many matters; and in some things all have to use the testimonies and judgments of others. It is one of the chief advantages of society and civilized life, that we can thus profit by the abilities and labours of many. The progress of Art and Science, and all the benefits of Civilization, are owing to the division of labour, and the skill gained by special training and practice. To suppose that the observations and inferences of any individual, without any peculiar qualifications for judging rightly, give a higher and stronger evidence than the judgment of many, with peculiar qualifications, is plainly contrary to all the lessons of Experience and the dictates of Reason. It must be the duty of every one to use *all* the evidence, direct or indirect, within his reach; and this obligation is greater as the subject is more important.

As superior knowledge is the ground of all Authority, so its extent should be limited to the matters, in which any possess more than ordinary knowledge. The *aptitude* for

special studies, and the *attention* given to them, which make persons *authorities* in some subjects, give them no authority in others, but the contrary. The more aptitude they have for some, and the more attention they have given to these, the less aptitude they are likely to have for others, and the less attention they are likely to have given them. Eminence in Mathematical studies may be unfavourable to superior knowledge in Natural sciences, and eminence in these be unfavourable to superior knowledge in History, or in ancient and modern Literature. A lawyer is no authority in medicine, nor a physician in law. But it is not unusual for those who are properly trusted in some matters, to claim and receive deference in others, though they have no pretension to any peculiar qualifications, and cannot speak with any reasonable authority. When authorities differ, as they generally do in controverted matters, their relative value, as evidences of truth, has to be considered. The authorities nearest to us, and received by our associates, are naturally regarded more than others; and these must be followed when they only are attainable. But there may be better, and all should be sought for, and estimated according to their real worth. If any authorities are accepted merely because they are the nearest and those most easily followed, there is no reason for permanent preference. They are the *highest* authorities, who have superior *abilities* and *opportunities*, and make full use of both. Every age, every country, every class, has its authorities; and though these may be unduly prized, they generally have some evidence deserving consideration.

In many subjects instruction begins with authority, and leads on to other evidence, which ultimately takes its place. The lessons of trade and art, morality and religion, are first accepted on the ground of authority, and then retained on the ground of personal experience. The propositions of Euclid are first believed because generally accepted, and

afterwards because the arguments are understood. For many reasons the latter convictions are to be preferred to the former, but not for their greater certainty. Some authoritative teaching may be verified, and therefore more is believed; but much will ever remain which can be known only by using the testimonies and judgments of others. In the most important matters the worth of authority may be tested by individual experience. What we find true in a few cases, we often reasonably believe to be true in others.

As the acceptance of *good* authority is reasonable and becoming, in every way beneficial and advantageous, so the acceptance of *bad* authority is unreasonable and improper, disadvantageous and injurious. As those who are competent to regulate *conduct* in public affairs, are often incompetent to regulate *belief* in disputed matters; so those well qualified to judge in some things, are less qualified to judge in others. When Truth is concerned, nothing but Evidence is to be regarded. Rank, wealth, and power are no proofs of superior knowledge. Learning, ability, success in one department of knowledge, are no signs of similar qualifications in another. Numbers have authority, if there be some independent examination and conviction, but none whatever if all merely repeat what they have been told. The writers of any age and country are authorities for their own land and time, but not for previous ages and distant countries. Errors, as well as truths, have been handed down from generation to generation, and the present ought to be wiser than the past.

When the claim of authority is made on behalf of any person or society, in our own or in former ages, it should be asked if they had superior knowledge. Is it known that their abilities and opportunities were above those now possessed, and that they were properly used? If so, there is *evidence* to be thankfully received; but if not so, there is none. The application of this test will strengthen all proper

authority, and shake only what is improper. If *evidence* is not seen to belong to *authority*, submission to it must be *unreasonable.* Truth will abide for ever, but nothing is sure and steadfast that will not bear examination. An ancient Christian teacher gave the rule, "*Prove all things; hold fast that which is good.*" He who ever spoke with the highest authority, habitually appealed to the Reason and Conscience of men. He taught men to respect and use all authority that was reasonable, but on some matters to judge for themselves. "*Why even of yourselves do you not judge what is right?*" He claimed to be a witness to Truth and a manifestation of the Truth, being both the Teacher and the Light of the world.

APPENDIX A.

MATTER, SUBSTANCE AND PROPERTIES.

MATTER may be defined simply, as that which fills *space* with *sensible* properties. Or more fully, as that which exists in some portion of space, and in various ways affects the senses; which is extended and divisible when more than a *point;* which is moveable, and prevents any similar substance from coming into the same space. Some part of our knowledge of Matter is *intuitive*, but most is *inferential*, the *existence* of some matter being directly *perceived*, but its *persistence* being always only *inferred.* The first *matter* known is that of our own bodies, and these are known as the *places* of sensations and the primary *objects* of perceptions. The movement of the hands over the surface of the body soon shows, that it is something to be felt and perceived; and all the senses, especially vision, increase this knowledge. Without some prior knowledge of our own bodies, that of other bodies appears to be impossible; but the latter soon and easily follows the former. In our own bodies we have a double consciousness; for we know them as pressed and pressing, as warmed and warming, as moved and moving, resisted and resisting; the locality of pleasure or pain, and the causes of these sensations; the places of seeing or hearing, and the objects primarily seen or heard. Only in a few cases is there anything to lead us to think, that outward objects have *feelings* like those we experience, and this is supposed only of human beings and some animals; but that

all outward objects have many *qualities* like those repeatedly perceived in our own bodies, is soon learnt easily and surely. They present the same appearances, and produce the same effects. Matter is distinguished from Mind, as that which is *felt* but does not *feel*, which is *perceived* but does not *perceive*, which is *known* but does not *know*.

The *properties* or *qualities* of Matter, known through the experience of various sensations, may be divided into three classes—the Mathematical, the Mechanical, and the Zoological.

I. The Mathematical properties are those which belong also to *space*, or to *body* in its relation to *space*. They are *extension, divisibility, figure, magnitude*, which belong both to *body* and *space;* and *mobility*, by which the former is distinguished from the latter. These properties are *universal*, and what is perceived in our own bodies is *like* what is believed of others. They are also called *primary* and *essential*. The *nominal* essence is that which is requisite for the *name;* the *real* essence is that which is fundamental to other properties.

II. The Mechanical properties refer to the Force, which produces or prevents a change in the position of the parts, or the whole of any material substance. They are *inertia, gravitation, cohesion, attraction, repulsion, hardness, softness, roughness, smoothness, flexibility, fusibility, elasticity, fluidity, solidity*, &c. &c. Solidity when opposed to *fluidity* is a *property*, but it is often used as *impenetrability* for the *substance* of Matter.

III. The Zoological properties are those which respect living animals, and denote the *causes* of sensation. They are such as *tangible, warm, cold, sapid, odorous, sonorous, bright, coloured, pleasant, painful.* These are called *secondary*

qualities. The *qualities* which exist in outward objects, are simply the *causes* of the *sensations* of the body, and have no *resemblance* to them. The same names are often given to the *qualities* and to the *sensations;* but as these are not *like*, the meaning of the term is changed. The heat, the sweetness, the fragrance, the sound, the colour, existing in outward objects, are entirely different from what we feel. Apart from the *senses* of animals, these *qualities* could not exist; and objects which to us are sweet and sour, red and blue, can have these properties only to those who have senses like ours. But it is not so where the *qualities* of objects are known. These must be the same to all intelligent beings. What is extended, straight, a square or circle, to one, is the same to all.

Material Substances are of two kinds, the one being *perceptible*, and the other *imperceptible.* Molecules are the smallest *perceptible* substances, and collections of similar or dissimilar molecules form the *substances* commonly referred to. What is *perceived* on any surface, is *supposed* to be like what is under, to a greater or less extent; and such *inferences* are often found to be true, but not always. What is *perceived* to exist at any time, is *believed* to continue for a longer or shorter period; and these *inferences* also are often found to be true, but not always. Of all *substances* our knowledge must be *inferential* in part; for *continuance* cannot be directly known; but the *existence* of that which is believed to continue, may be known *directly.* It is so with one kind of *substance*, but not with the other kind.

Atoms are the *imperceptible* substance, the *existence* of which can be known only by *inference*, as well as the *continuance.* As *masses* consist generally of *molecules* of different kinds, so the *molecules* consist generally of *atoms* of different kinds. A large experience shows the *persistence* of *molecules*, and a much larger shows the persistence of *atoms.* So vast and varied is the experience which shows the reality and

unchangeableness of *atoms*, that they are fully believed to be indestructible and unalterable. Of some bodies it may be questioned whether they are really *elements;* but if they are *atoms*, it is beyond question that they will remain, and be always what they are, while the world endures.

The knowledge of Matter is like that of Mind, partly intuitional and partly inferential. We know something by consciousness of the *self* which is the *substance* of mind, and of the *solidity* which is the *substance* of matter. Of both the present existence is perceived, the future inferred. Of ourselves, both substance and properties are first known by intuitions, and then by inferences. Of others, all knowledge must be inferential, from what we have ourselves experienced.*

* There is another use of the term Substance. It is applied to the First Cause of all finite existence, when regarded as *immanent* in all, *supporting* all, but not producing, *substans*. This is the *substance* of Spinosa and others, which is declared to be infinite, necessary, universal, and One; the one *subject* of which Thought and Extension are *attributes;* the one *real* substance, under the two *apparent* substances—Mind and Matter.

APPENDIX B.

THE BRAIN AND THE NERVES.

1. THERE are some *facts* respecting the Brain so obvious that they may be observed by all, and some *inferences* are so plain that they require no discussion; but it is not thus with all. There are *facts* which most must learn from physiologists, and where these agree the evidence of their *testimony* is quite satisfactory. But their *inferences* have not the same authority; and in the study of Mind they have no superiority over others. As some knowledge of the *organs* of sense belongs to Mental Science, because of their connection with sensations and perceptions, so some knowledge of the Brain is a part of Psychology, because of its connection with all mental states—those in which there is no consciousness of *body*, as well as those in which there is. Consciousness gives very little knowledge of the Brain. A few *sensations* appear to be felt there, as in other parts of the body; but no *motions* are perceived there, and physiologists find only the constant circulation of the blood, and the gradual change of the tissues. Most sensations seem to be felt in the various parts of the body known to be affected in some way. Thus touch and temperature are felt in the face and hands, taste in the mouth, hearing in the ear, vision in the eye, muscular effort in the arms and legs. Some supposed sensations are not wholly such, and some seeming perceptions of locality are erroneous; but this is no reason for distrusting all. Nerves appear to be requisite for all

animal feeling and movement, but many animals have no brain. This organ belongs only to the higher animals, and its magnitude and completeness are characteristics of Man.

2. The human Brain is described by physiologists as a large mass of soft nervous substance, secured in the hard, bony covering of the head. The outer part of the brain consists of grey matter, the small cells of which are generally supposed to be the source of a nervous energy, which is conducted by the white fibres of the interior to the lower part of the brain, and thence to every part of the body. The brain has two sides of apparently similar functions; and two principal portions, the anterior, called the *cerebrum*, and the posterior, called the *cerebellum*.* These have many *convolutions*, by which the extent of the grey matter is greatly increased. At the base of the brain are several nervous masses, the *sensory ganglia*, from which nerves proceed through apertures in the skull to the various organs of sense. But the larger adjacent portion of nervous matter, the *medulla oblongata*, passes into the *vertebral* column of the spine, from the junctures of which nerves go in couples to every part of the body. The grey matter, which in the chief portion of the brain is *external* to the white, is *internal* in the vertebral column; and the nerves which proceed from the *back* of the spine are connected with the *sensations* felt in all parts of the body, while nerves from the *front* are connected with their voluntary *motions*. The nerves of feeling and motion pervade the body in a very complicated network, and with the flow of the blood through arteries and veins, make the multifarious parts of the body to be one living whole. The circulation of the blood is requisite for all nervous vitality, and the brain receives a very large

* Dr. Maudsley states that "there may be the total destruction of one hemisphere, without any appreciable impairment of mental function."—*Physiology of Mind*, p. 264.

supply, as much as one-fifth of the whole. The nerves of the various senses are different, and the nerves of *motion* are different from those of *sensation.* But nothing is found in the elements and structure of the nerves to account for their several uses, or to explain their connection with the mind.*

3. These *facts* are not disputed, and some *inferences* from them are clear and certain. We know that the *blood* goes to the *brain* and returns from it, and that the *tissues* of the brain are continually wasted and renewed. It is evident that the *brain* is an organ for the production of *nervous* force: not the *only* organ, but the only source of *some* kinds of nervous force, and the chief source of other kinds. It is also evident, from daily experience, that all *mental* states have some connection with the *brain.* Many things which directly affect the brain, through it affect consciousness and all *mental* action; and *mental* action has some influence on the *cerebral* condition, as on the heart and lungs. So far common observations and scientific conclusions agree; but when it is said, that all *impressions* on the senses go up to the brain, and all *volitions* of muscular movement come down from it, these *inferences* are apparently contrary to the evidence of consciousness. Our *sensations* seem to be in the organs of sense, not in the brain; and our *efforts* to be in our muscles, not in the brain. And when it is also said, that every single act and product of the Mind has its corresponding state in some part of the Brain, and that *material* changes are the causes of all *mental* changes, it may well be questioned if there is sufficient reason for such inferences.

* Physiologists describe two nervous systems, the *cerebro-spinal* and the *sympathetic.* Only the first appears to be connected with the Mind; the other supplies to various organs—the lungs, heart, stomach, liver—what is requisite for their functions, unconscious changes and involuntary movements. But these systems, though different, are connected in many ways.

There should be more than plausible conjectures to support opinions so different from, and contrary to, all common observation. That there are a hundred thousand particles in the brain, and a hundred thousand mental experiences, can be no evidence of the connection of each of the particles with some particular experience.*

4. The chief reason assigned for the *exclusive* presence of Mind in the Brain, is the loss of special *sensation* and *power* when the *nerve* connecting an organ with the brain is pressed, and their destruction when the *nerve* is severed. Nothing can then go up to the brain, or come down from it. But this does not show that anything ever did go up, or that anything ever did come down, besides the *nervous force* requisite to the full vitality of the organ. When the connecting nerve is cut or injured, the organ can no longer receive what it before received from the brain, but becomes wholly or partially lifeless. The changed condition of the *organ* will account for the loss of feeling and power, as well as any change supposed in the brain. No signs of *impres-*.

* "There is no good ground to suppose that the mind is situate solely in the brain, or exclusively in any one part of the body. On the contrary, the supposition that it is really present wherever we are conscious that it acts," according to the Peripatetic aphorism, "is more philosophical, and consequently more probable, than any other opinion. . . . If we admit that the nervous system is the part to which it is proximately united, still the nervous system is itself universally ramified throughout the body; and we have no more right to deny that the mind feels at the finger points, as consciousness assures us, than to say that it thinks exclusively in the brain. . . . We have no reason whatever to doubt the report of consciousness, that we actually perceive at the external point of sensation, and that we perceive the material reality."—Sir W. HAMILTON, *Lect. Metaphysics*, ii. 128.

The same view,—that the Mind is in every part of the body where we are conscious of perception and voluntary movement,—is maintained by later eminent writers, Dr. M'COSH, in *The Intuitions of Mind;* and Dr. PORTER, in *The Human Intellect.*

sions or *impulses* are ever found in the brain, or in the intermediate nerves. Their existence in the brain is one *supposition* to account for certain *facts*, but not the only one, nor the most simple.

5. It has been argued that sensations must be in the Brain, because sometimes they *seem* to be felt where they cannot exist—in a limb which has been removed, and in an organ which has been destroyed. In considering such cases, it should be remembered that the relation of the *internal* to the *external* sensations is merely *inferred*. The sensation of the muscle moving the fingers is in the thick part of the arm, and is felt to be somewhere within it; but being alone there, it is not felt to be at the top or the middle or the end. When only the *end* is seen, the sensation is naturally referred to that part, though the tendon there has no sensibility, as volition and sensation may by association be transferred to the end of a stick. In the same way there may be diseased parts in a limb, and the sensations in the upper part may be transferred to the lower, where there is a visible sore; or there may be sensations of sympathy, or sensations which are only similar may be supposed to be in the same place. Thus when limbs have been amputated, internal sensations may seem to be felt in them. Either the former sensations were not really felt in the lost limb, or the past and the present are only similar. The *retina* of the Eye retains its sensibility when the *humours* have become opaque, and then some impressions which were produced by *light* may be produced by *pressure*, and others reproduced by thought. When the *retina* is destroyed, a portion of its sensibility still belongs to the part of the optic nerve which remains, and some of the sensations of vision are felt there. There is nothing in such examples to show that the sensation, which must be somewhere in the body, is not in or near the place where it seems to be felt; but is in the brain,

where it is never felt, and which appears to be as unsuitable for the sensations attributed to it, as the nerves of the organs are suitable. With some sensations there are mistakes respecting their exact locality, but this cannot show that all apprehensions of place are imaginary and untrue. Association will transfer thought and belief, but it originates nothing. If no place were ever seen, none could be ever supposed.

6. All connection of the Mind with the Body appears to be in the *cerebro-spinal* system. Of this the *brain* is one part, and the *nerves* which proceed from the brain and the vertebral column are the other part. All the sensations of which we are conscious belong to the *nerves;* they seem to exist there, and unquestionably changes do take place in the nerves. Mental feelings—joy and grief, love and hate, hope and fear—have some effects on the nerves, and some visible expression. Sensations are generally increased by *attention*, and they are sometimes produced by *thought.* Volitions are common causes of bodily motion. Thus the *mind* acts on the *body*. The *body* acts on the mind in ordinary sensations, and in all material perceptions; and also in other ways. Clearness of thought, strength of emotion, facility of choice, depend on the healthy condition of the brain; and the contrary mental states attend an unhealthy condition of the brain. A blow on the head will take away all thought and affection, as well as all sensation; and a slight pressure on the brain will stop all consciousness. Disease in the brain sometimes increases mental activity, but more frequently lessens it. Some cerebral disorders produce a partial or even a total forgetfulness; and they affect not only the sensations of the body, but also the thoughts and beliefs, and through them the emotions and affections and purposes of the soul. The general connection of the mental and corporeal is obvious to all. Weariness

and cold, excess in bodily exertion, in eating and drinking, lessen for a time all mental capacities. Stimulants at first increase, and then they diminish, mental activity and enjoyment. Mental excitement quickens the circulation of the blood, and mental exertion causes nervous exhaustion. The excessive action of the brain injures the mind, and the excessive action of the mind injures the brain; while the proper action of the brain assists the mind, and the proper action of the mind is good for the brain. In some degree, though not exactly, the measure and increase of *intelligence*, agree with the magnitude and growth of the *brain*.

7. Such facts show plainly and certainly that the Mind and the Brain are closely and constantly connected in all human experience, and that the health and vigour of the Mind depend on the health and vigour of the Brain. The circulation of the blood is necessary to the production of *nervous* energy in the brain; and the communication of this energy to the remote nerves is necessary to their mental use in sensations and motions. Some nervous energy is also necessary for all mental activity; and as the Brain acts on the Mind in supplying this, so the Mind reacts on the Brain in its expenditure. But there is nothing in these and similar *facts* to justify the *inferences*, that all states, actions, and products of the Mind, have corresponding states, actions, and products of the Brain, either as antecedents or consequents. Still less do they show, that the Brain is the organ or instrument of all mental operations. And still less do they support the conclusion, that the Mind and the Brain are the same; that the Brain feels and thinks, remembers and reasons, rejoices and regrets, resolves and reproves. A large portion of the nervous energy produced in the Brain passes to the nerves of sensation and motion, where the consciousness of sensations and motions appears. As a

portion of nervous energy is requisite for all mental feelings and actions, and the nerves of sensation and motion are not employed in thinking and believing, in wishing and choosing, it seems probable that this nervous energy is supplied to the mind directly from the sensory ganglia. If so, the Mind is present there, but not exclusively there. It is present wherever there is conscious sensibility and voluntary motion; but it is especially present where it receives the nervous energy now requisite for all kinds of mental action. Mind is present there by what it receives, though conscious of no locality; as it is present in all the organs of sensation and motion, where some locality is perceived.*

8. If the Brain were the *instrument* of the Mind, it would not follow that mental states and products might be attributed to it. A pen is an instrument for writing, a pencil for drawing, a knife for cutting; and according to their form and state will be in some degree the quality of the work in

* Ink is necessary for all writing, and the more writing there is, so much the more ink is required, and the writing is bad if the ink is bad, and coloured as the ink is. But only what is material is attributed to what is material. The ink has nothing to do with what is written. Nervous force is necessary for all thinking, but it does not give thoughts and sentiments and purposes.

The Brain supplies to the Mind, in some unknown way, the *nervous energy* which is requisite for all consciousness and exertion. When this is fully given, mental action may be complete and regular; when it is given partially, the mental action is partial and irregular; when it ceases entirely, the Mind has no present sensibility or power. The supply of nervous force is sufficient for daily work, and it is replenished by nightly rest. Its production, or its communication, may be hindered by whatever tends to superinduce sleep,—sedatives, excess in eating and drinking, recumbency, soothing sounds, and objects of vision which have a similar influence on the brain. Sleeplessness is the effect of unusual cerebral activity, resulting from disease, or from the action of some stimulents, or from unusual mental excitement.

which they are used. Yet it would never be said or supposed, that the pen caused the sentences written, or the pencil the figures drawn, or the knife the shape cut. These effects come from the *agent*, and not from the *instrument;* they are the products of mental power and purpose. The *brain* may be necessary to all mental action, and yet be no cause of what is thought and believed, desired and chosen. The brain is often said to be the *instrument* of the Mind, but the propriety of this usage is very questionable. An *instrument* is always known and regarded when it is used, but the *brain* is most useful when we are not conscious of its existence. Instruments have always some evident adaptation to the work for which they are employed; but the grey and white matter of the *brain* have no apparent fitness for the production of any thought or emotion, any affection or purpose. If clothes were the constant *condition* of the movement of the body, they would not be the *instrument* of motion, nor the means or the cause or the agent. Some states of body are always followed by mental changes, and some actions of mind are always followed by bodily changes. This is surely known; but it is no proof of identity, or of universal correspondence, or of necessary or constant connection. The Mind cannot think or believe, or admire or choose, or do any mental work, without the brain; but the brain is not an *instrument* because it is an indispensable *condition.* All *instruments* are *conditions*, but all *conditions* are not *instruments.* With one state of the Brain there is *remembrance*, and with another state there is *forgetfulness;* with one state there is *consciousness*, and with another state *unconsciousness.* Therefore some have inferred that the Brain is the cause of *remembrance* and *consciousness;* and others, that it is the cause of *forgetfulness* and *unconsciousness.* The older opinion, that the Soul is emancipated by the dissolution of the body, is quite as reasonable as the later opinion, that it must perish when its tent is taken down, its

clothing taken off, and some of its instruments taken away.*

9. Without bodies we should have no knowledge of the material world, receive no benefit from it, have no communication with our fellow creatures. Bodies are indispensable to our present welfare, and there is no reason to suppose that our spirits will ever be without some bodily accompaniment. In the Bible departed spirits are never without some clothing; when unclothed they are reclothed. (1 Cor. xv. 37–; 2 Cor. v. 3; Mark xii. 26.) The *spiritual* body is so called because it is simply subservient to the soul, never in opposition. Having no wants and propensities of its own, it is only the servant of the soul, to which alone all permanence and personality belong. The close and constant union of the Soul and Body gives the highest value to all the affections and actions which respect the outward and lower nature. The Body is ennobled by its connection with the Soul; but the Soul is degraded by assimilation to the Body. Man is defiled and debased, when the *soul* is the servant of the *body;* but he is purified and perfected, when the *body* is the servant of the *soul.* If there were no other use,

* We are more sure of the persistence of the Mind, the Self of which we are only sometimes conscious, than we can be of the Brain; but we do not know the unconscious states of the former, as we know some of the latter. We can therefore suppose changes in the Brain, more easily than changes in the Mind; but the possibility of imagining such changes is no proof, nor even presumption, of their reality. Momentary thoughts, and unconscious mental states, will account for much that has been attributed to *unconscious cerebration;* and the law of *continuity* is maintained in one way, as well as in the other.

The localization of mental states in the body has been various with different people. We commonly refer the entire *soul,* and especially *intelligence,* to the *head.* The Hebrews connected the *soul* with the *heart,* and placed *intelligence* in the *reins,* as did the Greeks. We connect courage, love, and compassion with the *heart;* others have referred them to the *liver* and to the *bowels.*

the connection might be maintained and extended, as so many other natural connections are, according to general laws. There are innumerable connections and correspondences, which seem only to manifest some unity of plan and purpose. But if no use for the connection of Mind and Body could be found or imagined, the existence of both and their union are manifest. We are conscious of the reality of both, and of their difference; and much may be learnt of both by observation and reflection. The tendency to add *fiction* to *fact* is universal. Imagination has contributed largely to ancient myths, and not a little to some modern science. Spiritualists have their conjectures, and Materialists have theirs; neither have much use or permanence.

10. Three testimonies from writers of different schools will be interesting to some.

Dr. Abercrombie says: "Of the whole of the remarkable process of sensation and perception we know nothing but the facts—that certain impressions made upon the organs of sense are followed by certain perceptions in the mind, and that this takes place in some way through the medium of the brain and nervous system. We are in the habit of saying that the impressions are conveyed to the brain, but even in this we probably advance a step beyond what is warranted. We know that the nerves derive their influence from their connexion with the brain, or as forming along with it one great medium of sensation; but we do not know whether impressions made on the nervous fabric connected with the organs of sense are conveyed to the brain, or whether the mind perceives them directly, as they are made on the organs of sense."—*Intellectual Powers*, p. 53.

Sir W. Hamilton says "That the mind, in its lower energies and affections, is immediately dependent on the conditions of the nervous system, and that in general the

development of the brain in the different species of animals is correspondent to their intelligence,—these are conclusions established upon an induction too extensive and too certain to admit of doubt. But when we attempt to proceed a step further, and to connect the mind or its faculties with particular parts of the nervous system, we find ourselves at once checked. Observation and experiment seem to fail; they afford only obscure and varying reports; and if in this uncertainty we hazard a conclusion, this is only a theory established upon some arbitrary hypothesis, in which fictions stand in place of facts. The uncertainty of such conclusions is shown by the unexampled diversity of opinion that has always reigned among those who, discontented with a prudent ignorance, have attempted to explain the phenomena of mind by the phenomena of organization."—*Metaphysics*, vol. i. p. 404.

Dr. Maudsley says: "What is the mechanism of Ideation, and what is the nature of the nervous action which is its physical basis, must for the present be entirely conjectural." —*Physiology of Mind*, p. 280.

Since all Emotions and Desires, Affections and Volitions, as well as Beliefs, depend on Ideas, what is admitted of Ideation must be equally true of all other spiritual states. If all explanations of what is *mental*, drawn from the study of the Brain, are "entirely conjectural," Physiology cannot be the foundation of Psychology; nor can it be proper to use the terms of the former, to state more correctly the truths of the latter. Popular language is understood to be *figurative*, when material terms are applied to the Mind. Scientific language should be more accurate; but if formed on what is "entirely conjectural," it differs little from common metaphors, and is more likely to mislead.

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